# Number, Shape and Measure 

## Book Three

By Kin Learning

## 2020 First Edition



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## Table of Contents

Place Value and Subtraction ..... 3
Division and Multiplication - Multiples of 10 ..... 12
Multiplication and Division Word Problems ..... 13
Mental Maths and Quick Calculations ..... 14
Place Value 2 ..... 15
Missing Numbers ..... 16
Place Value 3 ..... 16
Number Lines ..... 18
Negative Numbers ..... 19
Arithmetic Problems 1 ..... 21
Halfway Between ..... 23
Working Backwards ..... 24
Review - Primes, Indices and Working Backwards ..... 26
Probability ..... 27
Difference Between and Ratio ..... 28
Arithmetic Problems 2 ..... 30
24-Hour Time ..... 31
Elapsed Time ..... 32
Time Problems ..... 34
Converting Metric Measurements ..... 37
Length ..... 38
Weight ..... 40
Capacity ..... 41
Mixed Problems ..... 42
Measurement Review ..... 43
Averages ..... 44
Pictograms ..... 48
Venn Diagrams ..... 50
Scales ..... 51
Calculating Angles - Triangles ..... 52
Calculating Angles - Quadrilaterals ..... 53
Directions ..... 53
Lines of Symmetry ..... 54
Diagonal Lines of Symmetry 1 ..... 55
Diagonal Lines of Symmetry 2 ..... 56
Area and Perimeter ..... 57
Volume ..... 62
Review Quiz 1 ..... 63
Review Quiz 2 ..... 64
Review Quiz 3 ..... 65
Review Quiz 4 ..... 65

Place Value and Subtraction
Section 1
Write these numbers in words.

1. 805 $\qquad$
Eight hundred and fire
2.3,018 Three thousand and eighteen
3.30,030 Thirty thousand and thirty
4.100,000 One hundred thousand
2. 16,780 Sixteen thousand, seven hundred and eighty
3. 345,600 Three hundred and forty-fire thousand,
4. 49,578 Forty-hine thousand, five hundred and seventy-ight
5. 75,009 Seventy-fire thousand and nine

Section 2
Complete the subtraction questions below. You may wish to draw a number line to help you.

1. $1003-993=10$
2. $6004-2992=3,0129.6008-991=5,017$
3. $7005-1997=5,008$
4. $8002-1994=6,008$
5. $6749-992=5,757$
6. $1009-994=15$
7. $6001-2997=3,0041$
8. $3278-996=2,282$
9. $6009-4995=1,014$
10. $3003-991=1,012 \quad 12.9254-5995=3,259$

Section 3

1. $8001-1997=6,0045.7003-2992=4,011$
2. $3005-2994=11$
3. $8003-6992=1,0 \mid 1$
4. $6003-3991=2,012$
5. $4005-1991=2,014$
6. $4006-993=3,013$
7. $2001-1997=4$
8. $8007-2991=5,016$
9. $3007-996=1,011$
10. $8002-2997=5,005$ 12. $2001-1991=10$

Addition
1
$736+259=2$


4
$5854+8040$


7
$6900+883$


10

$$
9971+1150
$$



5

$4127+848$


0


11
8
$788+9973$


6

$8929+6980$


9
$2583+7635$


13
$3668+9880=14$
$174+716=$


15


1. Write your answer to question five in words.

Four thousand, nine hundred and seventy-
2. Add 99 to 6,003 . 6,102
3. What is the sum of 999 and 2,465 . 3,464
4. Add half a million and 380,245 . 880,245

Subtraction - Borrowing Tens or Hundreds






6





Subtraction - Advanced Borrowing












13


11


16



14


15


18
3104-2105 =


Subtraction - Thousands

1


2


3


4


5


7

$$
2000-962=
$$



8


6


9
$4000-848=$


Double Digit Multiplication 1

1
$123 \times 2=$


4
$813 \times 4=$

7.
$12 \times 24=$

10.
$28 \times 51=$


2


5

8.
$14 \times 12=$

11.
$66 \times 53=$


3
$454 \times 5=$


6
$98 \times 5=$

9.
$31 \times 23=$

12.
$92 \times 51=$


1. Calculate the product of 53 and $60.3,180$
2. Joshua has 42 boxes of oranges. Each box contains 35 oranges. How many oranges does she have altogether? 1,470
3. What is the product of 74 and $15 ? 1,110$
4. Multiply the number of days in January by the number of days in February during a leap year. 899

Double Digit Multiplication 2
Times tables needed: 1, 2 and 5.
1.
$81 \times 12=2$.

4.
$65 \times 21=5$.

7.
$36 \times 15=8$.

10.
$29 \times 15=11$.

$48 \times 22=3$.

$31 \times 52=6$.

$62 \times 55=9$.

$62 \times 21=12$.
$51 \times 25=$


Thousands Division

$$
\begin{aligned}
& \text { 1. } \quad 1208 \div 4=2 \text {. } \\
& \frac{0302}{4 \longdiv { 1 1 2 0 8 }} \quad \frac{0647.5}{42^{2} 7^{193} 0^{3} 0} \quad \frac{0702}{5 \sqrt{35110}}
\end{aligned}
$$

Question harder Complete the following questions. Than intended

1. $741 \div 3=2 . \quad 738 \div 2=3 . \quad 445 \div 5=$

$$
\frac { 2 4 7 } { 3 \longdiv { 7 ^ { \prime } 4 ^ { 2 } 1 } } \quad 2 \longdiv { 3 4 9 } \quad 5 \longdiv { 0 8 9 }
$$

4. $1730 \div 5=5 . \quad 9128 \div 4=6 . \quad 6556 \div 2=$

$$
\frac{0346}{5 \longdiv { 1 ^ { 1 } 7 ^ { 2 } 3 ^ { 3 } 0 }} \quad \frac{2282}{49^{\prime} 1^{3} 28} \quad \frac{3278}{2 \longdiv { 6 5 ^ { \prime } 5 ^ { \prime } 6 }}
$$

7. $5625 \div 5=8 . \quad 5442 \div 3=9 . \quad 1976 \div 2=$ 1125
$5 \longdiv { 5 6 ^ { \prime } 2 ^ { 2 } 5 }$
$3 \longdiv { 5 ^ { 2 } 4 4 ^ { \prime } 2 }$
$2 \longdiv { 1 1 ^ { \prime } 7 ^ { \prime } 6 }$

Complete the following questions. Write the remainders as fractions.
10. $7713 \div 5=11 . \quad 5407 \div 5=12 . \quad 1072 \div 3=$

$$
\frac{1542}{57^{2} 7^{2} 11^{\prime}} \frac{1081}{54^{5} 07} \frac{0357}{3} \frac{1}{11^{1} 0^{\prime} 7^{2} 2}
$$

13. 

$$
4847 \div 2=14
$$

$2129 \div 2=15$.

$$
3410 \div 3=
$$

$$
\left.2\right|^{24847}{ }^{\frac{1}{2}} \frac{1064 \frac{1}{2}}{2 \longdiv { 2 1 2 9 }} \frac{1136 \frac{2}{3}}{34^{\prime} 1^{2} 0}
$$

Thousands Division - Carrying and Remainders
Complete the following questions, writing the remainders as decimals.
1.
$4339 \div 2=2$.
$5282 \div 4=3$.
$2791 \div 5=$

$$
\frac{2169.5}{2 \sqrt{43^{\prime} 3^{\prime} 9: 0}} 4 \sqrt{1320.5} \frac{0558 \cdot 2}{5 \sqrt{2^{\prime} 7^{2} 9^{4} 1: 0}}
$$

4. 

$8849 \div 2=5$.
$9461 \div 5=6$.
$7278 \div 4=$

7.
$7102 \div 5=8$.
$6635 \div 2=9$.
$3853 \div 2=$

10.

$\frac { 0 6 4 9 . 5 } { 2 \longdiv { 1 1 2 9 1 9 . 0 } } 2 \longdiv { 4 2 1 1 . 5 }$
13.
$3512 \div 5=14$.
$7825 \div 5=15$.
$9101 \div 2=$

16.
$7190 \div 4=17$.
$6584 \div 5=18$.
$1087 \div 5=$


## Arithmetic Review

## Section 1 - Addition

1. $9979+9738=19,7173 . \quad 2123+1994=4,117 \quad 5 . \quad 5661+4860=10,521$
2. $3714+8965=12,6794 . \quad 5538+9036=14,5746 . \quad 2105+8248=10,353$

## Section 2 - Subtraction

1. $5105-2189=2,916$
2. $9010-889=8,121$
3. $2018-399=1,619$
4. $2007-1168=839$
5. $4013-2246=1,767$
6. $8012-4693=3,319$

Section 3 - Multiplication

1. $13 \times 85=1,105$
2. $40 \times 148=5,920$
3. $32 \times 115=3,680$
4. $53 \times 80=4,240$
5. $76 \times 14=1,064$
6. $59 \times 78=4,602$

Section 4 - Division

1. $4445 \div 2=2,222 \frac{1}{2}$
2. $8564 \div 5=1,712 \frac{4}{5}$
3. $3284 \div 3=1,094 \frac{2}{3}$
4. $6585 \div 2=3,292 \frac{1}{2}$
5. $4065 \div 2=2,032 \frac{1}{2}$
6. $5191 \div 5=1,038 \frac{1}{5}$

Section 5 - Mixed

1. $\quad 46 \times 119=5,474 \quad$ 3. $\quad 8033-1192=6,84 \mid 5 . \quad 8015-3858=4,157$
2. $3680+6675=10,3554 . \quad 7414+7891=15,3056 . \quad 8656 \div 3=2885 \frac{1}{3}$

Section 6 - Mixed

1. $1837 \div 3=612 \frac{1}{3} \quad$ 3. $\quad 57 \times 28=1,596 \quad$ 5. $12 \times 81=972$
2. $\quad 8117-279=7,8384 . \quad 9709 \div 2=4,854 \frac{1}{5} 6 . \quad 4447 \div 3=1,482 \frac{1}{3}$

Section 7 - Mixed

1. $\quad 88 \times 65=5,720 \quad$ 3. $\quad 9101-860=8,241 \quad$ 5. $\quad 5737+4149=9,886$
2. $\quad 8110-1850=6,260$ 4. $1623+8797=10,2406 . \quad 60 \times 116=6,960$

## Division and Multiplication - Multiples of 10

## Section 1

1. $7,200 \div 9=800$
2. $8,800 \div 8=1100$
3. $360 \div 9=40$
4. $1,200 \div 6=200$
5. $220 \div 11=20$
6. $48,000 \div 4=12,000$
7. $480 \div 6=80$
8. $360,000 \div 12=30,000$
9. $8,100 \div 9=900$

## Section 2

1. $700 \times 2,000=1,400,000$
2. $5 \times 50=250$
3. $60 \times 110=6,600$
4. $900 \times 110=99,000$
5. $30 \times 120=3,600$
6. $10 \times 50=500$
7. $8 \times 2,000=16,000$
8. $80 \times 500=40,000$
9. $40 \times 2,000=80,000$

## Section 3

1. $100 \times 79=7,900$
2. $100 \times 38=3800$
3. $120 \times 300=36,000$
4. $87 \times 600=52,200$
5. $370 \times 30=1,110$
6. $60 \times 40=2,400$
7. $75 \times 90=6,750$
8. $1480 \times 50=74,000$
9. $610 \times 800=488,000$

## Section 4

1. $20,000 \div 40=500$
2. $1,000 \div 5=200$
3. $600 \div 120=5$
4. $22,000 \div 110=200$
5. $30,000 \div 150=200$
6. $7,700 \div 11=700$
7. $600 \div 20=30$
8. $4,000 \div 5=800$
9. $990,000 \div 11,000=90$

## Section 5

1. $32 \times 500=16,000$
2. $5,000 \times 4=20,000$
3. $110 \times 400=44,000$
4. $860 \times 200=17,200$
5. $80 \times 1,110=88,800$
6. $6,400 \times 30=192,000$
7. $500 \times 140=7,000$
8. $60 \times 4,220=253,200$
9. $500 \times 2,000=1,000,000$

## Section 6

1. $3,000 \times$ $\qquad$ $=27,000$
2. $\qquad$ $\times 40=2,400$
3. $20 \times 20=400$
4. $3000 \times 2=6,000$
5. $500 \times 8=4,000$
6. 10 $\times 2=20$
7. $\qquad$ $\times 800=6,400$
8. $7 \times 100=700$
9. $50 \times 300=15,000$
10. $500 \times 60=30,000$
11. $4 \times 300=1,200$
$12.5 \times 900=4,500$

## Multiplication and Division Word Problems

1. 4,800 Smarties are packed into bags of 80 . How many bags are needed? 60
2. A school orders 120 notebooks with 60 pages in each. How many pages are there in total? 7,200
3. Lindsey runs $9,500 \mathrm{~km}$ a day. How many kilometres has she run after a week?
4. Find the area of a rectangle of land with sides of 400 m and 20 m .
5. Kelsey works 35 hours a week over 50 weeks. She was paid $£ 9$ an hour. How much has she earned by the end of the 50 weeks? $£ 15,750$
6. Shreyan saves 90 p every day for 75 days. How much will he have in total at the end of this period? $£ 67.50$
7. How many times does 40 go into 3600 ? 90
8. What do I multiply 15 by to get 6000 ? 400
9. What is $14 \times 23$ ? 322
10. 17 children pay $£ 14$ each to attend a play. How much do they pay in total? $£ 238$
11. Grandpa Francis is going to share $£ 32,000$ between his 20 grandchildren. How much does each grandchild receive? $E 1,600$
12. If five children have $£ 72$ each, how much do they have altogether?

13. A factory ships 110 bottles of juice. There are 300 millilitres in each bottle. How much juice is this in total? Write your answer in litres. 33 litres
14. What must I multiply 90 by to get 81,000 ? 900
15. What is 126,000 divided by 200 ? 630
16. Cupcakes at the school fair cost 10 p each. How many could I buy with $£ 100$ ? 1, 000
17. A bank has $£ 500$ in 5 pence coins. How many coins do they have? 10,000
18. Three whole numbers multiplied together total 1,512 . Two of the numbers are 14 and 12. What is the third number?
19. A bottle of washing up liquid costs $£ 1.20$. How much would 50 bottles cost? $£ 60$
20. Find one-third of $8,790.2930$

## Mental Maths and Quick Calculations

1. Which calculation has the largest value?
a) $300 \times 40 \quad 12,000$
c) $90 \times 1000$
90,000
e) $70 \times 30021,000$
(b) $800 \times 200160,000$
d) $2000 \times 5 \quad 10,000$
2. Which calculation has the smallest value?
a) $12 \times 50 \quad 600$
c) $3 \times 100$
300
(e) $3,300 \div 110$
b) $20 \times 15$
300
d) $1800 \div 20 \quad 90$
3. Which calculation has the smallest value?
a) $51 \times 0.05$
2,700
(c) $5.1 \times 0.05$
0.255
e) $0.51 \times 5 \quad 2.55$
b) $51 \times 0.5 \quad 25.5$
d) $510 \times 0.0052 .55$
4. Which calculation has the largest value?
(a) $30 \times 90 \quad 2,700$
c) $880 \div 11 \quad 80$
e) $450 \div 90 \quad 5$
b) $6,000 \div 12$d) $50,000 \div 250 \quad 200$
5. Which of the following statements is false?
$\begin{array}{cc}36 & 36 \\ \text { a) } \quad 360 \div 10=180 \div 5\end{array}$
(d)) $\begin{gathered}198 \quad 19 \times 11=180+11\end{gathered}$
b) $\quad \begin{array}{ll}315 & 315 \\ 35 \times 9 & =350-35\end{array}$
$4900 \quad 4900$
e) $70 \times 70=100 \times 49$
(c) $\quad 1900 \quad 190$
6. Which of the following statements is false?
a) $\quad 360 \quad 3600$
$4400 \quad 4400$
d) $110 \times 40=55 \times 80$
b) $\quad 2 \times 25=2 \times 100$
e) $\begin{gathered}4 \\ 100 \div 25\end{gathered} \stackrel{4}{4}=10,000 \div 2500$

500
(c) $45,000 \div 90=5000$
7. Which number, when multiplied by 40 , gives the same answer as $64 \times 10$ ? 6
8. If a jigsaw puzzle costs $£ 8.99$, how much do 20 puzzles cost? £ 179.80
9. A cup of tea costs $£ 2.99$. How much do 8 cups cost? $£ 23.92$

Place Value 2
Section 1
Write these numbers in digits.

1. Five hundred thousand and twenty
2. Two thousand, three hundred and fifty
3. Five million and forty-two
4. Sixty thousand, five hundred and five
5. One hundred and twenty thousand, six hundred and sixty
6. One million and seven hundred.
7. Three million, eight hundred thousand and fifty-five.


Answer the questions below.

1. Rearrange the digits 4,6 and 2 to get as close as possible to 308 .
2. Rearrange the digits 9,7 and 8 to get as close as possible to 922 .
3. Rearrange the digits $2,9,1$ and 3 to get as close as possible to 3,200 .
4. Rearrange the digits $8,4,2$ and 1 to get as close as possible to 1,350 .


Section 2

1. $1904-989=915$. Write two more number sentences that include these numbers.
$\qquad$
$989+915=1904$ and $\qquad$ $1904-915=989$
2. $38 \times 4=152$. Write two more number sentences that include these numbers.
$\qquad$ and $\qquad$ $152 \div 38=4$
3. $360 \div 3=120$. Write two more number sentences that include these numbers.
$\qquad$ and $\qquad$ $360 \div 120=3$
4. $8034-834=7,200$. Write two more number sentences that include these numbers.

$$
7,200+834=8034 \text { mow } 8034-7200=834
$$

## Missing Numbers

## Section 1

Each number in the pyramid is the difference between the two numbers above. Use this rule to fill in the missing numbers in each pyramid.


Section 2

1. $2800 \div 28=100$
2. $183+817=1,000$
3. $360 \div 10=36$
4. $8960-7,065=1,895$
5. $5 \times 50=250$
6. $25 \times 40=1,000$

## Section 3

1. $500 \div 1000=0.5$
2. $20 \div 0.2=100$
3. $160 \times 20=3,200$
4. $420 \div 200=2.1$
5. $900 \div 30=30$
6. $8 \cdot 5+1.5=10$
7. $131 \div 100=1.31$
8. $0.8 \times 20=16$

Place Value 3

## Section 1

For each set of digits below, subtract the smallest number you can form from the largest number you can form. Write your final answer below.

1. $37652 \quad 76,532-23567=52,965$
2. 32535

3. 36769

4. $36951 \quad 96,531-13,569=82,962$

## Section 2

The following numbers have had unnecessary zeros added to them. Rewrite the numbers without the extra zeros, making sure to keep the value of the number the same.

1. 27002700
2. 0088
3. $1.050 \quad 1.05$
4. $019.5 \quad 19.5$
5. $300.60 \quad 300 \cdot 6$
6. 0548548
7. $09.64 \quad 9.64$
8. 060006000
9. 040.140 .1
10. 0.00302000 .00302
11. 0690690
12. 00.1400 .14

## Section 3

1. Divide sixty thousand by fifty., 200
2. Subtract forty-three thousand from eight hundred thousand and three. 757,003
3. Divide one million by four. 250,000
4. How many times does ten thousand go into ten million? 1,000
5. What is the difference between the value of the 3 in 103,005 and the value of the 3 in $650,130 ? 3,000-30=2790$
6. What is the difference between the value of the 6 in 16,470,200 and the 6 in 56,903 ?

$$
6,000,000-6,000=5,994,000
$$

## Number Lines

Write the number indicated by each arrow below.

3.


7, $\uparrow$,
4.


11,950
5. Which of the arrows below is pointing to 3,600 ? E


## Negative Numbers

## Section 1

Write the following numbers in ascending order.

1. $-30,15,11,-6,3$
2. $205,-102,100,-30,-60$

$$
-102-100 \quad-300205
$$

3. $0,11,-3,17,-10$

$$
-10
$$

$$
-3
$$

$\qquad$

$\qquad$

Write the number indicated by each arrow below.


$$
\begin{align*}
& -30 \\
& -6  \tag{11}\\
& 3 \\
& 15
\end{align*}
$$

## Section 2

Complete the following number sentences. You may use the number line to help you.


1. $-6+10=4$
2. $-14+2=-12$
3. $-3+10=7$
4. $-3+6=3$
5. $-3+8=5$
6. $1-7=-6$
7. $-4-15=-19$
8. $4-6=-2$
9. $-2-1=-3$
10. $3-8=-5$
11. $-3+10=7$
12. $-5-10=-15$

## Section 3

1. $-19+19=0$
2. $-13-11=-24$
3. $-24-12=-36$
4. $-6+10=4$
5. $-33+8=-25$
6. $-27+30=3$
7. $16-24=-8$
8. $-13-9=-22$
9. $7-25=-18$
10. $-6-9=-15$

## Section 4

1. The temperatures in five different locations are as follows:

Moscow $=-5^{\circ} \mathrm{C}$, Shenzhen $=21^{\circ} \mathrm{C}$, London $=5^{\circ} \mathrm{C}$, Helsinki $=-3^{\circ} \mathrm{C}$ and New York $=14^{\circ} \mathrm{C}$.
a) What is the difference between the temperatures in London and Helsinki? $8^{0}$
b) What is the difference between the temperatures in Helsinki and Moscow? $2^{\circ}$
c) What is the difference between the highest temperature and the lowest temperature? $21--5=26^{\circ}$
d) What is the difference between the temperatures in New York and Moscow? $19^{\circ}$
2. The lowest temperature on record in the U.S.A. is $-80^{\circ}$ F. The highest temperature on record in the same country is $134^{\circ} \mathrm{F}$. What is the difference between these two temperatures? $204^{\circ}$

## Arithmetic Problems 1

## Section 1 - Spacing Problems

1. Twenty seedlings are planted in a row. If there is a space of 15 cm between each one, how far is it from the first to the last seedling? $19 \times 15=285 \mathrm{~cm}$
2. A lane has 8 lamp posts along it. There is a distance of 10 metres between each post. What is the distance between the first and the last lamp post? $7 \times 10=70 \mathrm{~m}$
3. An alarm rings for 6 seconds each time. There is a 5 second pause between each ring. If the alarm rings 10 times in total, how long is it from the beginning of the first ring to the end of the last ring? $(6 \times 10)+(5 \times 9)=105 \mathrm{~s}$ or 1 m 45 s
4. Christopher is completing a hike. He stops every 5 miles on his walk and he makes a total of 13 stops. The distance between his last stop and the end of the hike is only 4 miles. How far does Christopher walk in total? $(5 \times 13)+4=69$
5. Fifty cars are parked side by side in a large car park. Each car is 160 cm wide and there is a gap of 40 cm between each one. What is the distance from the first to the last car?

Section 2

$=9960 \mathrm{~cm}$ or 99.6 m

1. Pizzas cost $£ 9.60$. Three children buy two pizzas and share the cost equally. How much do they each pay? $£ 9.60 \times 2=£ 19.20 \quad € 19.20 \div 3=£ 6 \cdot 40$
2. Samantha buys five pencils for 36 p each. How much change does she get from a $£ 5$ note?

$$
36 p \times 5=1.80 \quad E 3 \cdot 20
$$

3. Amit has 12 crates. Each crate contains 5 trays of oranges. There are 8 oranges in each tray. How many oranges are there altogether? 480
4. Sophia wants to buy goodie bags for 50 people. Goodie bags come in packs of 6 . How many packs must Sophia buy in order to have goodie bags for all of her guests?
5. A television originally cost $£ 4,060$ but has been reduced to $£ 3,180$ in a sale. By how much has the price of the television changed? $£ 880.00$
6. Calculate the product of 100 and $£ 7.80$. $£ 780$
7. The children on Brooklyn Road decided to wash some cars to earn pocket money. They bought 3 bottles of soap for $£ 5.25$ each, which was enough to clean 50 cars.
a) How much profit would they make if they charged $£ 3$ to clean each car?

$$
£ 5.25 \times 3=£ 15.75 \quad \pm 150-15.75=£ 134.25
$$

b) If 5 children washed the cars and split the profit equally, how much did each child receive? $£ 26.85$

## Section 3

1. A library has 3,027 books on Tuesday morning. By Tuesday evening, 81 books have been returned and 103 books have been taken out. How many books does the library have altogether at the end of the day? 3005
2. A candle shop sells a dozen different types of candle. If they sell 18 of each candle, how many candles will they sell?
3. Gary buys a car that is worth $£ 7000$. He is given a discount of $£ 173$. How much does Gary spend on the car after the discount is applied? $£ 6827$
4. Candace buys a car that originally cost $£ 5,000$, however, the price has been reduced by $£ 2,545$ in a sale. Caitlyn buys a car that originally cost $£ 7,000$ that has been reduced by $£ 3,650$. Who spends more on their car and by how much? Caitlin by $£ 805$
Cai $=£ 3350$, Can $=£ 2455$
5. Wendy buys a magazine for $£ 2.95$. How much change does she get from a $£ 5$ note? $£ 2 \cdot 05$
6. Potatoes cost 47 p per 500 g . How much do 8 kg of potatoes cost? E 7.52
7. Camille makes buns which each cost her 15 p to make. She sells them for 55 p each. If she sells all the buns and makes a profit of $£ 14.40$, how many buns did she sell? 36
8. Increase $£ 15,402$ by $£ 3,860$. $£ 19,262$

## Section 4

1. Billy has savings of $£ 1,000$. He buys a television for $£ 550$. How much money does he have left? £ 450
2. Harry inherits $£ 3,050$ from his grandfather. He already has savings of $£ 2,103.50$. He is given another $£ 74.50$ for his birthday. How much money does Harry have now? £ 522
3. Senam has a fruit stall. She sells 17 oranges every weekday and 54 in total at the weekend. The oranges are sold for 42 p each. How much money does Senam make in a week? $£ 58.38$ sells 139

4. Mickey is calculating how much his phone bill will cost. Texts cost 12 p each and calls cost 38p per minute. This month, Mickey has sent 103 texts and made 54 minutes of calls. How much will Mickey's phone bill be? $£ 32 \cdot 88 \quad \begin{aligned} & \ell 12 \cdot 36=\text { texts } \\ & \\ & £ 20.52=\text { calls }\end{aligned}$
5. A shop sells 800 pairs of shoes in a day. Each pair costs $£ 40$. How much money does the shop make in one day? $£ 32,000$
6. Ado's school report is 8 pages long. On average, there are 18 words on each line and 48 lines on each page. Roughly how many words are in Ando's report? 6912

## Halfway Between

## Section 1

1. Which number is halfway between 1032 and 1805 ?
2. Which number is halfway between 8.7 and 6.2 ? 7. 45
3. Which number is halfway between 2.5 and 4.8 ? $3 \cdot 65$
4. Laurie wants to buy a table from Kim for $£ 350$. Kim wants Laurie to pay $£ 385$. They agree to meet in the middle on the price. How much will Laurie pay? $£ 367.50$
5. Temi has 168 trolls and Nimesh has 34. How many trolls must Temi give Nimesh so that each has the same number? 67

## Section 2

1. Which number is halfway between 126.4 and 200? $163 \cdot 2$
2. Which number is halfway between 80.8 and 105.18? 92.99
3. Which number is halfway between -35 and $-8 ?-21 \cdot 5$
4. The number halfway between two numbers is 66 . The smaller number is 38 . What is the other number?
5. The number halfway between two numbers is 168.5 . The larger of the two numbers is 253. What is the smaller number?


## Section 3

1. Which number is halfway between 3050 and 2000? 2525
2. Halfway between two numbers is 54.5 . One of these numbers is 64 . What is the other number? 45
3. Chris has $£ 4.20$ and Claire has $£ 5.60$. How much money must Claire give to Chris so that they have the same amount? 7 Op
4. The waist on a pair of small boys' trousers is 55 cm . The waist on a large pair is 61 cm . If the waist in the medium trousers if halfway between these measurements, what size will it be? Give your answer in millimetres. 580 mm
5. Aleyna has $£ 10.46$ and Harry has $£ 15$. How much money must Harry give to Aleyna for them each to have the same amount? $£ 2 \cdot 27$

## Working Backwards

## Section 1

1. 




4. I am thinking of a number. The product of my number and seven is 56 . What number was I thinking of?

5. I'm thinking of a number. I halve my number and add 15 . My answer is 19. Which number am I thinking of?

6. I'm thinking of a number. I double my number and add 16 . My answer is 52 . Which number am I thinking of?

## Section 2

1. After doubling a number and subtracting 19 , I get 13 . What number did I start with? $\| 6$
2. I'm thinking of a number. I halve my number and subtract 6 . My answer is 10 . Which number am I thinking of? 32
3. The product of two numbers is 750 . One number is 5 . What is the other number?
4. Three numbers multiplied together total 7,200 . One of these numbers is 30 , another is 40. What is the third number? 6
5. I divide a number by 5 and then subtract 14 . The result is 15 . Which number did I start with?

6. After dividing a number by 4 and adding 11 , I get 22 as my result. Which number did I start with? 44

## Section 3

1. A number multiplied by 10 and then tripled is 1,560 . What is the number? $1560 \div 3=520$
2. If I quadruple a number, the answer is 1,400 . What was the original number? 350 $1400 \div 4$
3. The product of 12 and one other number is 600 . What is the other number?
4. I'm thinking of a number. If I multiply my number by 4 and add 8 , my answer is 48 . Which number am I thinking of? 10

$$
\square \times 4+8=48
$$

5. I think of a number, divide it by 4 and add 7 . The answer is 3 more than 10 . Which number did I start with?


$$
\square \div 4+7=13
$$

6. I multiply a number by 10 , subtract five and then double my answer. My answer now is 50. What number was I thinking of? $3 \times 10-5 \times 2=50$
7. I am thinking of a number. I multiply my number by itself and add three. My answer is 52 . What number was I thinking of?

8. I have added 13 to one-third of the number I started with. The result is 22 . Which number did I start with? 27

$$
\square \div 3+13=22
$$

## Section 4

1. I find one-third of a number and then add 19. I get an answer that is 10 less than 38 . Which number did I start with? 27

$$
\square \div 3+19=28
$$

2. When you find the square root of this number, the answer is 8 . What was the number? 64

3. I find the square root of my number and divide by two. My answer is four. What number was I thinking of?

$\sqrt{\square} \div 2=4$
4. I find one-quarter of my number and then find one-third of my new number. My answer is 4 . What number was I thinking of?

$\square \div 4 \div 3=4$
5. I'm thinking of a number. Three-quarters of my number is 54 . What was my original number? $72 \quad \square \div 4 \times 3=54$
6. I am thinking of a number. Fourth-fifths of my number is 68 . What was my original number? $85 \div 5 \times 4=68$
7. I am thinking of a number. If I add 10 to nine-tenths of my number, my answer is 37 .

What number was I thinking of? $\quad \square 0 \div 10 \times 9+10=37$
8. Massy spends two-thirds of the money in her bank account then puts an additional $£ 16$ into her account. She now has $£ 46$. How much money did she have to begin with?

$$
E 45 \quad \square \div 3+16=46
$$

## Review - Primes, Indices and Working Backwards

1. When you add 2 to a number and then multiply that number by itself, the answer is 49 . What was the original number?
2. Write the next number in the sequence: $144,121,100,81,64$
3. Circle the prime numbers: 55,29 , (31.) 60,9, (5, (11) 28
4. I am thinking of a number. I add 12 lots of this number onto my original number and the answer is 39 . What was the original number? 3
5. What is 4 cubed? 64
6. Calculate $1^{2}+2^{2}+3^{2}+4^{2}+5^{2}$. $1+4+9+16+25=55$
7. Subtract $10^{2}$ from $10^{3} .1000-100=900$
8. I am thinking of a number. I square root this number and then subtract five. My answer is 5. What was my original number?

100
9. What is the difference between -25 and $9 ? 34$
10. Subtract the square root of 121 from $13^{2}$. 158
11. Round 3,564 to the nearest hundred. 3,600
12. What is $2^{5} .32$
13. I find half of a number and find three-quarters of the answer. My answer is 150 . What was my original number? 400
14. $\operatorname{Add} 3^{3}$ and $4^{3}$. 37
15. Which of the following numbers cannot go in the shaded section of the Venn diagram below?
a) 30
b) 15
c) 45
d) 20
e) 180

Multiples of 5


## Probability

1. There are 30 chairs in a room. 13 are blue, 10 are red and the rest are green. What is the probability that you sit on a chair that is green?
2. A tin contains chocolate, lemon and vanilla cupcakes. There are 9 chocolate cupcakes and there is a 1 in 3 chance of selecting a vanilla cupcake.
a) There are 24 cupcakes in total. How many vanilla cupcakes are there? 8
b) How many lemon cupcakes are there? 7
c) 4 vanilla cupcakes are eaten. What is the probability of selecting a chocolate cupcake now? $9 / 20$
3. In a bag of marbles, there are 4 red, 3 blue and 5 yellow. What is the probability of pulling out a blue marble?
a) $\frac{4}{12}$
b) $\frac{1}{3}$
c) $\frac{1}{4}$
d) $\frac{3}{5}$
4. Miriam goes to a tennis club where she knows five people and the rest are strangers. There are ten strangers. If she is randomly assigned a partner, what is the probability that it is someone she knows? $1 / 3$
5. In a class with 14 girls and 16 boys, I randomly select one child. What is the probability that I choose a boy? Write your answer as a fraction in its lowest terms. 8/15
6. A 9 -sided dice has the numbers 1 to 9 on each side. If I roll the dice, what is the probability of rolling a number less than 4 ? $1 / 3$
7. In a drawer of socks, there are 8 plain pairs, 10 striped pairs and 2 spotted pairs. What is the probability of pulling out a striped pair?
a) I am holding a single striped sock. If I reach into the same drawer and pull out another single sock, what is the probability that it is also striped? $19 / 39$
8. The colours of 40 cars in a car park are below.


| White | Black | Red | Blue | Yellow |
| :---: | :---: | :---: | :---: | :---: |
| 10 | 10 | 12 | 7 | 1 |

a) If one car leaves the car park, what is the probability that it is black? Write your answer in its simplest terms. 1/4
b) Sasha says that, if a car is selected at random, there is a $50 \%$ chance that it is not black or white. Is she correct?

## Difference Between and Ratio

## Section 1

1. $£ 23$ is shared between Amos and Faith. Amos receives $£ 3$ more than Faith. How much does Amos receive? $£ 13$
2. Headphones cost $£ 10$ less than speakers. Together, the headphones and the speakers cost $£ 150$. How much do the speakers cost? $£ 80$
3. Yvonne is 2 years younger than Beatrice. If their current ages add up to 22, how old will Beatrice be next year? 13
4. Jarrod and Sonia have been out for a meal. Jarrod's meal cost $£ 5.80$ more than Sonia's. If their meals cost $£ 42.30$ altogether, how much would Jarrod pay? $£ 24.05$

$$
£ 42 \cdot 30-£ 5 \cdot 80=36 \cdot 50
$$

Section $2 \quad E 36 \cdot 50 \div 2=18 \cdot 25$

1. Kate has two boxes of tennis balls. She has 364 balls in total. One box has 36 more balls in it than the other. How many balls are in each box? 200 and 164
a) How many balls would Kate need to move from one box to the other so that they each have the same number of balls? 18
2. A flight to Berlin costs $£ 30$ more than a flight to Paris. The cost of both flights is $£ 230$. How much does a flight to Paris cost? $€ 100$
3. A brother and sister's ages add up to 61. The brother is 5 years older than his sister. What are their ages?


## Section 3

1. Together, Archie and Sam have listened to 5 hours and 48 minutes of music this month. Archie listened to music for one hour longer than Sam. For how many hours and minutes did Archie play music? 3 hrs 24 ming
2. There are 59 children in Year 5 at Valley Primary School. There are 7 more boys than girls in Year 5. How many girls are there? 26
3. Lauren is currently a third of her mum's age. If their ages add up to 52 , how old was Lauren's mum when Lauren was born? $\begin{array}{r}L: L M \\ 13: 39\end{array} \rightarrow 26$ years old
4. In a test, Arabella scores 15 marks fewer than Sophie. Sophie and Hannah have a combined score of 147 , with Sophie scoring twice as much as Hannah. What was Arabella's score? 83

## Section 4

1. Jamie and Kathryn went to a restaurant for dinner on Tuesday night. They ordered the same items but, in addition, Kathryn ordered a drink that cost $£ 1.40$ and dessert for $£ 4.50$. If the total bill came to $£ 30.50$, how much did Kathryn spend? $£ 18 \cdot 20$
2. Carla is five years older than Agatha. Milly is twice as old as Carla and Agatha put together. Altogether their ages add up to 51 . How old is each person?

$$
M=34, A=6, C=11
$$

3. Rita is three times as old as her cousin Alan. If their ages right now add up to 36, how old will Rita be next year?

4. Ghanika is allowed to watch 3 hours of TV between Monday and Friday. On Monday and Thursday, she watches a 42-minute programme. On Tuesday she watches a 20-minute show and on Wednesday she watches a show that is 10 minutes longer. She would like to watch a show that is 50 minutes long on Friday. Will she be allowed? No.
5. A family is comparing their step counts for the week. Together, Arielle and Christian have taken 42,292 steps, with Christian completing 15,488 more steps than Arielle. Their friend Ethan's step count is halfway between Arielle and Christian's.
a) How many steps has Arielle taken? 13,402
b) How many steps has Ethan taken? 21,146

## Section 5

1. Annabel is 4 years older than Stephen and 8 years younger than Daniel. If Annabel and Daniel's ages add up to 24, how old is Stephen?
2. Aleesa is one-fifth of Francis' age. Their ages add up to 60 . How old will Aleesa be next year? ||
3. On Monday, Srikruth started his school project. On Tuesday, he wrote twice as many words as he did on Monday. On Wednesday he wrote twice as many words as he did on Tuesday. If we wrote a total of 5,600 words, how many words did he write one Tuesday?

4. Lisa and Erika's phone bills add up to $£ 20$. Erika's total call minutes were 23 minutes longer than Lisa's. They sent the same number of texts. If calls cost bp per minute, how much is Lisa's phone bill?

$$
£ 9.31
$$

5. Rebecca, Rupert and Rhia's parents split their pocket money in the ratio of their ages. Rebecca is 8 , Rupert is 10 and Ria is 12 . If their parents give Rupert $£ 40$ monthly, how much do they give Rebecca annually?

## Arithmetic Problems 2

1. How many times can I take 11 from 1500? 36
2. A bottle contains 330 ml of cough syrup. If a person is advised to take 5 ml of medicine three times a day, how long will this bottle last? 22 days
3. Lisa has a lemonade stall. She sells 8 cups of lemonade every weekday. She sells each cup for 25 p.
a) How much money does Lisa make between Monday and Friday? E 10
b) On weekends, Lisa sells 18 cups of lemonade each day. How much money does she make in a week? $£ 19$
4. What is the difference between 1 g and half a kilogram? 499 g
5. Noah has 382 animals on his ark. The animals exit the ark in pairs. If 106 pairs of animals leave, how many pairs does Noah have left on his ark? 85
6. True or false: 2 minutes past 5 P.M. is one hour later than 16:02. The
7. True or false: midday is written as 00:00. False
8. Taylor receives $£ 3.50$ in pocket money each week. If she saves all of her pocket money, how many weeks will it take her to save $£ 70$ ? 20 weeles
9. Taylor's older brother, Michael, receives $£ 4.50$ in pocket money each week.
a) How long will it take him to save $£ 900$ ? 200 weeks
b) How long will it take him to save $£ 180$ ? 40 weeks
10. Temi and Nimesh have 202 trolls between them. Semi gives 20 trolls to Nimesh so that they both have the same number. How many did they each have to start with? $T=121$ $N=81$
11. How many times can I fill a glass which holds 250 ml from a jug which holds 9.5 L ? 37
12. Write 1004 seconds in minutes and seconds. 16 ming 44 secs
13. Write five-and-a-half million in figures. $5,500,000$
14. Philippa earns $£ 25,992$ a year. How much does she receive per month if her salary is split equally between each month? $\{2,166$
15. A ship travels approximately 485 kilometres each day. How far does it travel during the month of June? 14,550

24-Hour Time
Section 1
Convert the following times into 12 -hour form.

1. $23: 55$ 1: $55_{p m}$
4.21:43 9:43 pm
2. $08: 47$ $\qquad$
3. $22: 4710: 47 \mathrm{pm}$
4. $11: 51$ 11: 51 am
5. $19: 44$ 7:44 pm
6. 14:44 2:44 pm
7. 16:21 4:21pm 4:21pm 9. 13:39 1:39 pm

Section 2
Convert the following times into 12 -hour form.

1. $20: 38$ 8:38 pm 4. 19:35 7:3.5 pm
2. 07:11 7:11 am
3. 05:35 5:35 am 5. 12:40 12:40 pm 8. 13:20 1:20 pm
4. $00: 12 \underline{12: 12 ~ a m ~ 6 . ~ 20: 03 ~ 8: 03 ~ p m ~ 9 . ~ 17: 43 ~ 5: 43 p m ~}$

Section 3
Write the following times in 24-hour time.

1. 3 minutes past 9 o'clock in the morning.
2. Quarter to 10 at night.
3. Half past 5 in the evening.
4. 25 minutes to 6 in the evening.
5. 20 minutes past 2 o'clock in the afternoon.

Section 4

1. 8 minutes to midday.
2. Half past 8 in the morning.
3. 10 minutes to 5 in the evening.
4. Half past 1 in the afternoon.
5. 15 minutes before 10 o'clock at night.

09:03


Elapsed Time
Write how much time has elapsed below.
Section 1

| Start Time | End Time | Elapsed Time |
| :---: | :---: | :---: |
| 3:47 P.M. | 4:41 P.M. | 54 minutes |
| 7:37 A.M. | 7:02 P.M. | 11 hours 25 minutes |
| 9:27 A.M. | 12:18 P.M. | 2 hours 51 minutes |
| 11:35 P.M. | 3:18 A.M. | 3 hours 43 minutes |
| 7:10 A.M. | 5:26 P.M. | 10 hours 16 minutes |

Section 2

| 6:01 A.M. | 9:27 P.M. | 15 hours 26 minutes |
| :---: | :---: | :---: |
| 8:48 A.M. | 11:25 P.M. | 14 hours 37 minutes |
| 8:24 P.M. | 3:06 A.M. | 6 hours 42 minutes |
| 5:28 A.M. | 1:48 P.M. | 8 hours 20 minutes |
| 8:57 P.M. | 10:12 P.M. | 1 hour 15 minutes |

Section 3
Fill in the gaps in the table below.

| Start Time | End Time | Elapsed Time |
| :---: | :---: | :---: |
| 9:49 A.M. | 2:30 P.M. | 4 hours 41 minutes |
| 4:52 P.M. | $9: 14$ P.M. | 4 hours and 22 minutes |
| 4:46 P.M. | 10:02 P.M. | 5 hours 16 minutes |
| 4:48 P.M. | 8:13 P.M. | 3 hours 25 minutes |
| 7:39 A.M. | $12: 27$ P.M. | 4 hours and 48 minutes |

## Section 4

Complete the timetable below. Write your answers in 24-hour form.

| Departure <br> Time | $08: 52$ | $09: 11$ | $09: 38$ | $09: 56$ | $10: 36$ | $12: 30$ | $13: 08$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Time Taken | 45 mins | 1 hour <br> 18 mins | 38 mins | 59 mins | 51 mins | 46 mins | 1 hour <br> 14 mins |
| Arrival Time | $09: 37$ | $10: 29$ | $10: 16$ | $10: 55$ | $11: 27$ | $13: 16$ | $14: 22$ |

## Section 5

| Orpington | $09: 15$ | $10: 17$ | $11: 35$ | $12: 40$ |
| :--- | :--- | :--- | :--- | :--- |
| Bromley South | $09: 34$ | - | $11: 50$ | - |
| Beckenham Junction | $09: 46$ | $10: 39$ | - | - |
| London Victoria | $09: 55$ | $10: 50$ | $12: 09$ | $13: 08$ |

1. How long does the 09:15 train take to travel between Orpington and Victoria? 40 mins
2. Which is the fastest train from Orpington to London Victoria? $12: 40$
3. Tanya arrives at Beckenham Junction at 09:50. How long must she wait for the next train to London Victoria? 49 minutes
4. Sarah arrives at Bromley South at 10:32 and takes the next available train. At what time does she arrive in London? 12:09
5. How long does the $10: 17$ Orpington train take to travel to Beckenham Junction? 22 mins
6. Sarah wants to get to London Victoria by 12:30 at the latest. By what time must she leave Bromley South?
7. Which train takes the longest to complete the full journey? How long does this train take?

## Section 6

Complete the timetable below.

| Departure <br> Time | $15: 08$ | $15: 16$ | $16: 33$ | $17: 19$ | $16: 47$ | $17: 27$ | $18: 55$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Time Taken | 58 mins | 51 mins | 28 mins | 53 mins | 1 hour <br> 40 mins | 1 hour <br> 38 mins | 1 hour <br> 18 mins |
| Arrival Time | $16: 06$ | $16: 07$ | $17: 01$ | $18: 12$ | $18: 27$ | $19: 05$ | $20: 13$ |

## Section 7

Fill in the gaps in the table below.

| Start Time | End Time | Elapsed Time |
| :---: | :---: | :---: |
| $8: 57$ P.M. | 5:46 A.M. | 8 hours and 49 minutes |
| 1:54 A.M. | $8: 53$ A.M. | 6 hours and 59 minutes |
| 7:13 A.M. | 7:32 P.M. | 12 hours 19 minutes |
| $8: 59$ P.M. | 10:27 P.M. | 1 hours and 28 minutes |
| $10: 52$ A.M. | 1:46 P.M. | 2 hours and 54 minutes |
| $10: 49$ A.M. | 10:58 P.M. | 12 hours and 9 minutes |
| $11: 08$ P.M. | 6:25 A.M. | 7 hours and 17 minutes |

## Time Problems

## Section 1

Ashok lives in Leeds and has an important meeting in London at 13:00. First, he must walk to the bus stop, take a bus to the train station and take the train to London. He leaves his house at 7:15 and arrives at the bus stop at 7:24. The bus arrives 7 minutes later and gets to the station at 7:43. Ashok's train normally leaves at $8: 01$ but it is delayed by 6 minutes. The train arrives in London at 12:32.

1. How many minutes did it take for Ashok to walk to the bus stop? 9 minutes
2. At what time did the bus arrive? $07: 31$
3. How long did the bus take to travel to the station? 12 minutes
4. How long did Ashok spend at the train station before his train arrived? 24 minutes
5. How long did the train take to get to London? 4 hrs 25 mums
6. If it takes Ashok 25 minutes to walk from the station in London, will he get to his meeting on time? Yes. (Arrives at 12:57)
7. In total, how long was Ashok's journey from his house to the station in London?
8. Ashok leaves London at $15: 30$ and his return journey takes exactly the same amount of time as his outward journey. At what time will Ashok get home? $20: 47$

## Section 2

1. How many weeks are there in 266 days? 38
2. How many days are in the first three months of the year? $90 \quad(31+28+31)$
3. How many days are there in April, May and June? $91(30+31+30)$
4. A clock displays a time of $15: 16$. If the clock is 7 minutes fast, what is the correct time? $15: 09$
5. How long is it between 5:34 A.M. and midday? 6 hours 26 minutes
6. How many weeks are there in 308 days? 44 weeks
7. When Shao left his house, the clock showed 1 o'clock. When he arrived at his destination, the clock showed 14:56. How long was Shao's journey? I hour 56 min
8. Vinnie completes three test papers that are each 40 minutes in length. Vinnie takes a 5 minute break in between each test paper. How long does it take him to complete all three papers? 2 hours 10 wins
9. H pw many whole minutes are in 500 seconds? 8 minutes
10. Today is Friday the 10 th of June. What was the date on Monday? $6^{\text {th }}$ June
11. Clementine is age 4 years and 9 months. Mark is 8.5 years old. What is the difference in their ages? 3 years 9 mouths
12. Basil is 10 years old and 8 months. Tanya is 11 years old and 2 months and Vinnie is 10 years old and 11 months. What do their ages add up to in years and months?

$$
32 \text { years and } 9 \text { months }
$$

13. What date is one week earlier than the Fth of April?

## Section 3

The birthdays of three siblings are below. Polly is older than Alice and younger than Colin.

## Polly <br> 16/5/85

Colin
22/3/83
Alice
1/12/89

1. When was Colin born? $22 / 3 / 83$
2. When was Alice born? $1 / 12 / 89$
3. How old was Polly on January $1^{\text {st, }}$ 2000? 14 years old
4. What date is three weeks after the $16^{\text {th }}$ of May? $6^{\text {th }}$ June

## Section 4

1. The time in Abu Dhabi, U.A.E. is 4 hours ahead of Greenwich Mean Time (GMT). If the time is 16:24 in London, what is the time in Abu Dhabi? $20: 24$
2. The time in Los Angeles, U.S.A. is 8 hours behind GMT. In Tokyo, Japan, the time is 9 hours ahead of GMT. If it is 08:25 on Friday in Los Angeles, what is the day and time in Tokyo? 01:25 on Saturday
3. Frances takes 900 seconds to complete a race. How many minutes is this? 15 mins
4. Sophie starts her school day at 8:35 A.M. She finishes 6 hours and 50 minutes later. If she goes to bed at 8:30 P.M., how much time does she have between finishing school and going to bed? 5 hous and 5 mins
5. Tunde drove for 1 hour and 25 minutes on Monday, 2 hours and 45 minutes on Tuesday, and for 55 minutes on Wednesday. How long has Tunde spent driving by the end of Wednesday? 5 hous and 5 mins
6. In order to get to school, Aiofe takes a train that takes 14 minutes, a bus that takes 18 minutes and then she walks for 6 minutes. If Aiofe would like to arrive at school by 8:30am, by what time must she leave home? $07: 52$
7. A train is due to depart at $14: 57$. The train journey takes 26 minutes. If the train is delayed by 6 minutes along the way, at what time does it arrive at its destination? $15: 29$
8. Round 428 seconds to the nearest minute. 7 minutes
9. Circle the date below that is closest to 4th April.
a) 3rd May
b) 24th February
c) 5th July
d) 31st January
10. A clock is running 12 minutes behind. What time is it when the clock says midnight? $00: 12$
11. A plane journey usually takes 3 hours and 57 minutes. The plane was due to depart at 14:30, but it left 15 minutes late. The pilot was able to shorten the journey by 5 minutes once in the air. At what time did the plane arrive at its destination? 18:37
12. It takes Yinny 1 hour and 18 minutes to write a story. It takes Eddy 47 minutes to write his story. How much longer does Yinny take than Eddy? 31 minutes

## Converting Metric Measurements

Introduction 1

1. $1 \mathrm{~cm}=10 \quad \mathrm{~mm}$
2. $5 \mathrm{~cm}=$ $\qquad$ mm
3. $8 \mathrm{~cm}=80 \mathrm{~mm}$
4. $20 \mathrm{~cm}=$ $\qquad$ 200 mm

## Introduction 2

1. $1 \mathrm{~km}=1,000 \mathrm{~m}$
2. $13 \mathrm{~km}=13,000 \mathrm{~m}$
3. $25 \mathrm{~km}=25,000 \mathrm{~m}$
4. $600 \mathrm{~km}=600,000 \mathrm{~m}$

## Introduction 3

1. $1 \mathrm{~kg}=1,000 \mathrm{~g}$
2. $12 \mathrm{~kg}=12,000 \mathrm{~g}$
3. $3 \mathrm{~kg}=3,000 \mathrm{~g}$
4. $90 \mathrm{~kg}=90,000 \mathrm{~g}$

Decimals - Capacity

1. $4 \mathrm{~L}=4,000 \mathrm{~mL}$
2. $5.5 \mathrm{~L}=5,500 \mathrm{~mL}$
3. $6 \mathrm{~L}=6,000 \mathrm{~mL}$
4. $8.3 \mathrm{~L}=8,300 \mathrm{~mL}$
5. $2.25 \mathrm{~L}=2,250 \mathrm{~mL}$
6. $0.2 \mathrm{~L}=$ $\qquad$ mL
7. $2 \mathrm{~m}=200 \mathrm{~cm}$
8. $5 \mathrm{~m}=500 \mathrm{~cm}$
9. $19 \mathrm{~m}=1900 \mathrm{~cm}$
10. $6 \mathrm{~m}=-600 \mathrm{~cm}$
11. $1 \mathrm{~L}=1,000 \mathrm{~mL}$
12. $4 \mathrm{~L}=4,000 \mathrm{~mL}$
13. $15 \mathrm{~L}=15,000 \mathrm{~mL}$
14. $50 \mathrm{~L}=50,000 \mathrm{~mL}$
15. $5,000 \mathrm{~g}=$ $\qquad$ kg
16. $10,000 \mathrm{~g}=$ $\qquad$ kg
17. $35,000 \mathrm{~g}=$ $\qquad$ kg
18. $15,000 \mathrm{~g}=$ $\qquad$ kg
19. $14,000 \mathrm{~mL}=$ $\qquad$ L
20. $7,000 \mathrm{~mL}=$ $\qquad$ L
21. $6,100 \mathrm{~mL}=$ $\qquad$ L
22. $15,050 \mathrm{~mL}=\perp 5.0 .5 \mathrm{~L}$
23. $100 \mathrm{~mL}=$ $\qquad$ L
24. $4,600 \mathrm{~mL}=4 \cdot 6$
$\qquad$ L

Decimals - Weight

1. $6,000 \mathrm{~g}=$ $\qquad$ kg
2. $5,250 \mathrm{~g}=5 \cdot 25 \mathrm{~kg}$
3. $18,500 \mathrm{~g}=18 \cdot 5$ 5
$\qquad$ kg
4. $600 \mathrm{~g}=$ $\qquad$ kg
5. $2,100 \mathrm{~g}=$ $\qquad$ kg
$\qquad$ kg
6. $\quad 8.9 \mathrm{~kg}=$ $\qquad$ 8,900 g
7. $5.25 \mathrm{~kg}=5,250 \quad \mathrm{~g}$
8. $0.025 \mathrm{~kg}=$ $\qquad$
9. $0.01 \mathrm{~kg}=$ $\qquad$ g
10. $0.9 \mathrm{~kg}=$ $\qquad$ g
11. $7.3 \mathrm{~kg}=$ $\qquad$

## Length

Decimals - Length 1

1. $15 \mathrm{~mm}=1 \cdot 5 \mathrm{~cm}$
2. $80 \mathrm{~mm}=$ $\qquad$ cm
3. $146 \mathrm{~mm}=14 \cdot 6 \mathrm{~cm}$
4. $170 \mathrm{~mm}=$ $\qquad$ cm
5. $34.5 \mathrm{~cm}=345 \mathrm{~mm}$
6. $165 \mathrm{~cm}=1650 \mathrm{~mm}$
7. $24.6 \mathrm{~cm}=246 \mathrm{~mm}$
8. $2.9 \mathrm{~cm}=$ $\qquad$ mm

## Decimals - Length 2

1. $1.6 \mathrm{~m}=160 \mathrm{~cm}$
2. $30 \mathrm{~m}=3000 \mathrm{~cm}$
3. $2.4 \mathrm{~m}=$ $\qquad$ cm
4. $\quad 6.95 \mathrm{~m}=$ $\qquad$ cm

## Decimals - Length 3

1. $3,400 \mathrm{~m}=$
 km
2. $14,500 \mathrm{~m}=14 \cdot 5$ km
3. $20,200 \mathrm{~m}=20 \cdot 2 \mathrm{~km}$
4. $250 \mathrm{~m}=0.2 .5 \mathrm{~km}$

## Mixed Length

1. $7.5 \mathrm{~m}=750 \mathrm{~cm}$
2. $0.09 \mathrm{~m}=$ $\qquad$ cm
3. $7.8 \mathrm{~km}=7,800 \mathrm{~m}$
4. $5 \mathrm{~cm}=0.05$ m
5. $8 \mathrm{~cm}=0.08 \mathrm{~m}$
6. $10 \mathrm{~cm}=0.1 \mathrm{~m}$
7. $525 \mathrm{~m}=0.525 \mathrm{~km}$
8. $6.5 \mathrm{~m}=6.50 \mathrm{~cm}$
9. $110 \mathrm{~cm}=$ $\qquad$ m
10. $90 \mathrm{~cm}=$ $\qquad$ m
11. $460 \mathrm{~cm}=$ $\qquad$ m
12. $235 \mathrm{~cm}=2.35 \mathrm{~m}$
13. $2,750 \mathrm{~cm}=27.5 \mathrm{~m}$
14. $2.5 \mathrm{~km}=2,500 \mathrm{~m}$
15. $1.1 \mathrm{~km}=1,100 \mathrm{~m}$
16. $90 \mathrm{~km}=90,000 \mathrm{~m}$
17. $8 \mathrm{~km}=8,000 \mathrm{~m}$
18. $8,350 \mathrm{~m}=8 \cdot 35 \mathrm{~km}$
19. $60 \mathrm{~m}=0.0 \mathrm{~b} \mathrm{~km}$
20. $0.1 \mathrm{~km}=$ $\qquad$ m
21. $4 \mathrm{~m}=0.004 \mathrm{~km}$
22. $225 \mathrm{~m}=22,500 \mathrm{~cm}$
23. $11.5 \mathrm{~km}=11,500 \mathrm{~m}$
24. $90 \mathrm{~cm}=$ $\qquad$ m
25. $1.45 \mathrm{~m}=$ $\qquad$ 145 cm
26. $8 \mathrm{~cm}=0.08 \mathrm{~m}$
27. Hayley needs to cut a piece of ribbon into 4 cm strips. The whole ribbon measures 1 m 8 cm . How many pieces of ribbon will Hayley have?27
28. Reuben has driven 853 m . He then drives another 0.8 km . How far does Reuben drive in total? Write your answer in kilometres. 1.653 km

## Fractions - Length

Fill in the following.


100 centimetres $=1$ metre

$\frac{1}{4}$ metre $=$ $\qquad$ cm
$\frac{1}{2}$ metre $=50 \mathrm{~cm}$
$\frac{3}{4}$ metre $=75 \mathrm{~cm}$
$\frac{1}{10}$ kilometre $=100 \mathrm{~m}$
$\frac{1}{4}$ kilometre $=250 \mathrm{~m}$
$\frac{1}{2}$ kilometre $=500 \mathrm{~m}$
$\frac{3}{4}$ kilometre $=\underline{750} \mathrm{~m}$

## Length Problems 1

1. What is the sum of 7.5 metres and 800 cm ? 15.5 metres or 1550 cm
2. Joshua was 0.98 m tall last year but is now 5 cm taller. How tall is he in centimetres?
3. Yasmin's curtains are 220 cm long. If she adjusts the curtains and makes them 0.05 m longer, what is the new length in metres? 2.25 m
4. A doorknob is 3.5 cm wide. What is this in millimetres? 35 mm
5. Willard originally had 3 m of ribbon. He then cut off 70 cm . How much ribbon does he have left in metres? $2 \cdot 3 \mathrm{~m}$
6. Elsa's fingernail is 1.2 cm long. How long is this in millimetres? 12 mm
a) Elsa's fingernail grows by 3 mm . How long is her fingernail now? 15 mm
7. Nell completes a walk three-quarters of a kilometre in length. How far has she walked in metres? 750 m
8. Toby has completed an 8 km walk today. Tanya has walked 120 metres further. How far has Tanya walked in metres? 8, 120 m
a) Re-write your answer in kilometres. 8.12 1em
9. Evie walks for half a kilometre before sitting on a bench. When she continues walking, she walks another 8,300 centimetres. How far has she walked in total? 58.3 m
10. What is 30 cm less than 8.7 m ? Write your answer in metres.

$$
8.4 m
$$

## Weight

Complete the missing weights:

1. $5 \mathrm{~kg}=5,000 \mathrm{~g}$
2. $850 \mathrm{~g}=0.85 \mathrm{~kg}$
3. $1.3 \mathrm{~kg}=1,300 \mathrm{~g}$
4. $18,900 \mathrm{~g}=$ $\qquad$ kg
5. $\quad 10.05 \mathrm{~g}=$ $\qquad$ Stg
6. $49.5 \mathrm{~kg}=49,500 \mathrm{~g}$
7. $5.25 \mathrm{~kg}=$ $\qquad$ g
8. $9,000 \mathrm{~g}=$ $\qquad$ kg
9. $8 \mathrm{~g}=0.008 \mathrm{~kg}$
10. $70.423 \mathrm{~kg}=70,423 \mathrm{~g}$
11. $0.003 \mathrm{~kg}=$ $\qquad$ g
12. $45 \mathrm{~g}=$
 kg
13. $0.0005 \mathrm{~kg}=$ $\qquad$ g
14. $80.01 \mathrm{~kg}=80,010 \mathrm{~g}$
15. $0.7 \mathrm{~kg}=700 \mathrm{~g}$
16. $5,500 \mathrm{~g}=5.5 \mathrm{~kg}$

## Weight Problems

1. A box of cornflakes weighed $\frac{1}{2} \mathrm{~kg}$ when it was bought. It now weighs 89 g . How many grams of cornflakes have been eaten? 411 g
2. Bentley is carrying a box of crockery that weighs 5.2 kg . He takes 350 g of crockery out of the box. How much does the box weigh now? 4.85 kg
3. Insert greater than (>), less than (<) or equal signs ( $=$ ) in the following questions.
a) 3.8 kg $\qquad$ 38g
d) $250 \mathrm{~g} \_<\quad 2.5 \mathrm{~kg}$
b) $\quad 0.1 \mathrm{~kg}$ $\qquad$ 10 g
e) $9.3 \mathrm{~kg}=9300 \mathrm{~g}$
c) 5 kg $\qquad$ 5000g
4. Jordan weighs 63 kg . His brother weighs $2,500 \mathrm{~g}$ more. How much do they weigh altogether? 128.5 kg
5. The baggage allowance for a flight is 15 kg and you are allowed to take two bags. If one of your bags weighs $4,500 \mathrm{~g}$, how much is the other bag allowed to weigh? 10.5 kg
6. Sam bought a 10 kg bag of cat food and used $3,265 \mathrm{~g}$ of it. How much, in kilograms, does he have left? $6,735 \mathrm{~g}$
7. A box weighs 500 grams. How much do 9 boxes weigh?
a) 450 g
C) 4.5 kg
b) 45 kg
d) 4.05 kg

## Capacity

1. $4.75 l=\underline{4,750} \mathrm{ml}$
2. $7.005 l=7,005 \mathrm{ml}$
3. $12.5 l=12,500 \mathrm{ml}$
4. $7,800 \mathrm{ml}=7.8 \mathrm{l}$
5. $945 \mathrm{ml}=0.945 l$
6. $4,230 \mathrm{ml}=4 \cdot 23 \mathrm{l}$
7. $98 m l=0.098 l$
8. $5.75 l=5,750 \mathrm{ml}$
9. $\quad 13.2 l=13,200 \mathrm{ml}$
10. $7 l=7,000 \mathrm{ml}$
11. $9 \mathrm{ml}=0.009 \mathrm{l}$
12. $1,375 \mathrm{ml}=1 \cdot 37 \mathrm{Sl}$

## Capacity Problems

1. Sophie's bottle originally contained one-quarter of a litre of lemonade. Sophie then drank 170 mL of lemonade. How much does she have left in millilitres? 80 ml
a) Re-write your answer in litres. 0.08 litres
b) What fraction of the lemonade did Sophie drink? $\frac{17}{25}$
2. Leon collects 1.3 L of rainwater on Monday and another 910 mL on Tuesday. How much water has Leon collected now? Write your answer in litres and millilitres. 2 L 210 ml
3. Angela's car currently has 1.36 L of petrol in the tank. She then fills her car with another 38 L 42 mL . How much petrol is there in Angela's car now? 39,402 ml
4. Insert greater than (>), less than (<) or equal signs (=) in the following number sentences.
a) $8 l$ $\qquad$ 8000 ml
d) $\frac{3}{4} l=750 \mathrm{ml}$
b) $2.2 \mathrm{l} \_2120 \mathrm{ml}$
e) 600 ml $\qquad$ $0.6 l$
c) $\frac{1}{4} l \_$< 500 ml
5. A bottle of perfume has a capacity of 0.4 L . If there are only 38 millilitres left, how much perfume has been used? 362 ml
6. Monty fills a sink with $2,402 \mathrm{~mL}$ of water. He adds another 3.5 L of water. How much water does he have altogether? 5,902 ml
7. A 2-litre bottle is half full of water. Suresh drinks three-quarters of the water. How much is left in litres? 0.25 l
8. A small bottle contains 55 mL of perfume. A large bottle contains three times as much. How many litres of perfume are in a large bottle? 0.1651

## Mixed Problems

## Section 1

1. The distance from Louise's house to Nick's house is 3 km 802 m . The distance from Nick's house to Nigel's house is 4.5 km . How far does Louise drive in total if she first drives to Nick's house and then drives to Nigel's house? 8, 302 m
2. Victoria's pencil is 8 cm long. After she sharpens her pencil, the pencil is 2 mm shorter. How many long is it now? Write your answer in centimetres. 7.8 cm
3. Darius has a 1.5 litre bottle of coke. If he pours 272 ml into a glass, how much is left in the bottle? 1 l 228 ml
a) How many whole glasses could he fill from this bottle? 5
4. In a high jump competition, Alessandro jumps 1.5 m and Brad jumps 1 m 36 cm . Who jumps higher and by how much? A Lessandrv, 14 cm
5. John's fence was 94 cm high but it has recently been made 0.5 m higher. How tall is the fence now? Write your answer in metres. 1.44 m

## Section 2

1. Myleene and her family live on a farm and must take it in turns to milk the cows. Myleene collects $2,500 \mathrm{ml}$ and her dad collects 3 L 25 ml . What is the difference between the amounts they have collected? 525 ml
2. Mark is two-thirds of his father's height. If his dad is 189 cm tall, how tall is Mark? 126 cm
3. A charity fun run is 1.5 km long. If each of my strides is $\frac{1}{2} \mathrm{~m}$ long, how many strides will it take to complete the run? $150,000 \div 50 \mathrm{~cm}=3,000$ stnides
4. Seamus mixes 305 ml of black paint with 1.2 L of white paint. He uses 700 millilitres of the new mixture. How much paint does he have left? 805 ml
5. Milena is sitting on an armchair that is 1.4 m wide. Skandha's chair is half as wide. How wide is Skandha's chair? Write your answer in centimetres. 70 cm
6. A poster is 3 m wide. Another poster is 540 cm wide. What is the difference in their widths? Write your answer in centimetres. 240 cm
7. Justin uses 3 L of water to water his garden. His neighbour uses $1,040 \mathrm{~mL}$ more water than he does. How much water did Justin's neighbour use in millilitres? 4, 040 ml

## Measurement Review

## Section 1

1. $8.03 \mathrm{~km}=8,0,30 \mathrm{~m}$
2. $65 \mathrm{~m}=0.065 \mathrm{~km}$
3. $9 \mathrm{~cm}=$ $\qquad$ m
4. $54 \mathrm{~mm}=$ $\qquad$ cm
5. $48.2 \mathrm{~km}=48,200 \mathrm{~m}$
6. $66 \mathrm{~km}=66,000 \mathrm{~m}$
7. $19 \mathrm{~m}=1,900 \mathrm{~cm}$
8. $180 \mathrm{~mm}=$ $\qquad$ cm
9. $22 \mathrm{~cm}=$ $\qquad$ mm
10. $1.3 \mathrm{~m}=$ $\qquad$ cm
11. $24.05 \mathrm{~m}=$ $\qquad$ cm
12. $6,700 \mathrm{~m}=$ $\qquad$ km
13. $11 l=11,000 \_m l$
14. $450 \mathrm{~g}=$ $\qquad$ kg
15. $3 \frac{1}{2} \mathrm{~kg}=3,500 \mathrm{~g}$
16. $8,760 \mathrm{ml}=8 \cdot 76$
17. $9 \mathrm{~cm}=$ $\qquad$ mm

## Section 3

1. $2.5 l=2,500 \mathrm{ml}$
2. $50 \frac{1}{2} l=50,500 \mathrm{ml}$
3. $0.5 \mathrm{~cm}=$ $\qquad$ mm
4. $24 l=24,000 \mathrm{ml}$
5. $6 \mathrm{~mm}=$ $\qquad$ cm
6. $80 \mathrm{~cm}=$ $\qquad$ m
7. $11 \mathrm{~m}=$ $\qquad$ cm
8. $80 \mathrm{ml}=$ $\qquad$ I
$\qquad$ cm

## Section 4

1. $2.6 \mathrm{~kg}=$ $\qquad$ g
2. $80 \mathrm{ml}=$ $\qquad$ $l$
3. $3,010 \mathrm{~g}=$ $\qquad$ kg
4. $2400 \mathrm{~cm}=$ $\qquad$ m
5. $10 \frac{1}{2} \mathrm{~m}=$ $\qquad$ cm
6. 0.7 l= $\qquad$ $m l$
7. $3,322 \mathrm{ml}=$ $\qquad$
8. $3 \frac{3}{4} l=3,750 \mathrm{ml}$

## Averages

## Section 1

Complete the table below by writing the method used to find each type of average.

| Mean | Add all of the numbers together and divide by the number of numbers |
| :---: | :---: |
| Median | Put the numbers in ascending order and find the middle number. |
| Mode | Find the number(s) that occurs most often. |
| Range | Calculate the difference between the largest and the smallest number. |

## Section 2

Find the mean, median, mode and range of the following numbers:

$$
10,15,14,8,10,10,12,10,10
$$

$$
\text { Mean }=11 \quad \text { Median }=10 \quad \text { Mode }=10 \quad \text { Range }=7
$$

$100,145,152,121,100,162$

Mean $=130 \quad$ Median $=133 \quad$ Mode $=100 \quad$ Range $=62$
$310,300,296,160,220,220$

$$
\text { Mean }=251 \quad \text { Median }=258 \quad \text { Mode }=220 \quad \text { Range }=150
$$

1. Eight chickens weigh $620 \mathrm{~g}, 490 \mathrm{~g}, 600 \mathrm{~g}, 580 \mathrm{~g}, 600 \mathrm{~g}, 605 \mathrm{~g}, 695 \mathrm{~g}$ and 770 g .
a) What is the modal chicken weight? 600 g
b) What is the average weight of a chicken? 620 g
c) What is the range of weights? 280 g
d) What is the median? $602 \cdot 5 \mathrm{~g}$

## Section 3

1. Find the mean, median, mode and range of: $96,96,40$ and 48.

| Mean $=70$ | Mode $=96$ |
| :--- | :--- |
| Median $=72$ | Range $=56$ |

2. Lily and Christian have both taken three tests at school.

| Name | Test 1 | Test 2 | Test 3 |
| :---: | :---: | :---: | :---: |
| Lily | 25 | 28 | 13 |
| Christian | 19 | 25 | 26 |

a) Who had the better average score? Christian
b) What is the range of Lily's scores? 15
3. The measurements below show the volume of five containers.

$$
1,150 \mathrm{~L}, 900 \mathrm{~mL}, 1.03 \mathrm{~L}, 1.2 \mathrm{~L}, 920 \mathrm{~mL}
$$

a) What is the mean volume? $1,040 \mathrm{ml}$ or 1.04 l
b) What is the range of the measurements? 300 ml
c) What is the median? 1.031
4. Seattle receives 80 mm of rain on Monday, 70 mm on Tuesday, 75 mm on Wednesday and 65 mm on Thursday. How much rain has Settle received on average across the four days? 72.5 mm
a) What is the range of rainfall? 15 mm
5. There are five farms in one area. Farm $A$ has 17 horses, Farm $B$ has 19 horses, Farm $C$ has 11 horses, Farm D has 10 horses and there are 13 horses on Farm E.
a) On average, how many horses do the farms have? 14
b) What is the median number of horses? 13
c) What is the range? 9
6. Three children are running a 200 m race. The third child finishes in 21.5 seconds, the second child finishes in 20.7 seconds and the first finishes in 20.2 seconds. What is the average time taken to complete the race? 20.8 s

## Section 4

1. Find the mean, median, mode and range of: $6,7,2,8,4,5$ and 5 .
Mean $=5 \cdot 3$
Mode $=S$
Median $=5$
Range $=6$
2. Demetri has drawn a chart to show the colours of different cars on his street. Which is the modal car colour? Blue

3. Sidcup F.C. has played in 8 football games so far this season. The number of goals scored in each game is written below. In how many games does Sidcup F.C. perform above average? 3

$$
5,2,4,3,0,3,1,6
$$

9. Find the mean of the five smallest square numbers.
10. Chloe is going on holiday. She says that the average July temperature at her destination is $32^{\circ} \mathrm{C}$. The range of the July temperatures is $30^{\circ} \mathrm{C}$. Chloe has decided not to pack any jumpers for her trip, is this a good idea? Why or why not?
 and get very cold

## Section 5

1. Find the mean, median and range of the numbers $38,41,38,31$
a) $\quad$ Mean $=37$
b) Median $=38$
c) $\quad$ Range $=10$
d) Mode $=38$
2. Keith is playing in a Scrabble tournament. He plays three games in each round. In the first round, Keith scored an average of 516.5. In the second round, Keith scored 547, 585, 578.
a) By how much has Keith's average score improved between the first and the second round? $53 \cdot 5$ points
b) Keith plays another round and scores his lowest average yet. If his scores are still in the five hundreds, suggest three scores for Keith's final three games.
E.g. 501, 502,503
3. Clothes Storm has reduced the prices of three tops by $10 \%$. The tops originally cost $£ 45$, $£ 20$ and $£ 39$. After the price reduction, what is the average price of a top? $£ 31 \cdot 20$
a) What is the range of prices after the reduction? $£ 22 \cdot 50$
4. Find the mean, median, mode and range of: 3.8, 6.2, 2.6, 5.4, 9, 2.6
a) $\quad$ Mean $=4 \cdot 9$
b) $\quad$ Median $=4 \cdot 5$
c) $\quad$ Range $=6 \cdot 4$
d) Mode $=2 \cdot 6$
5. The range of four numbers is 5 , the numbers add up to 17 . If two of the numbers are 7 and 2 , what could the other numbers be? 5 and 3 or 4 and 4
a) What is the average of these numbers? 4.25
6. The range of another four numbers is 11 . Two of the numbers are 18 and 14.18 is the largest number.
a) What could the two other numbers be? 7 plus any number
b) What is the median of the four numbers?
c) What is the average?
7. What is the modal letter in INCANDESCENT?

## Pictograms

The pictogram below shows the number of owls seen on average each month.

1. How many owls were seen in total from October to February? 31
2. How many more owls were seen in November compared to January? 7
3. How many more owls were seen in February compared to December?
4. What was the highest number of owls seen in one month?
```
10
```

5. What is the mean number of owls seen over the months?

$$
6 \cdot 2
$$

6. What is the median number of owls seen from October to February? 6

One symbol (选) represents two owls.


The chart below shows the number of people that came to a salon during the course of a week.

One symbol represents 6 customers.


1. Wendy sees all of the customers that come to the salon on a Wednesday. On average, she earns $£ 12.50$ per customer. Approximately how much money does she make on Wednesday?
2. How many customers came to the salon in total during the week?
3. How many more customers came on Thursday compared to Wednesday? 18
4. How many more customers came on Friday compared to Tuesday? 6
5. On which day did the most customers visit and how many customers came that day?


The pictogram below shows the average number of hours of sunshine and the total rainfall in Alaska from May to September.
This symbol 4 represents 4 hours of sunshine. This symbol 鰦 represents 10 mm of rainfall.

Month | Number of Hours of Sunshine |
| :---: |
| (Per Day) |

1. On average, how many hours of sunshine are there in June? 9 hours
2. How many hours of sunshine are expected in total during the month of July?
3. What is the total expected rainfall from May to September? 275 mm
4. What is the range of hours of sunshine? 5 hours
5. On average, how many millimetres of rain will Alaska see per month between May and September?
6. Which month has the most hours of sunshine? May

55 mm
7. What is the median rainfall in centimetres? 5 cm

## Venn Diagrams

1. A class of children is surveyed about whether they eat fish or meat. Their answers are in the Venn diagram below.

a) How many children eat both meat and fish?
b) How many children are vegetarians? 8
c) How many children are pescatarians (eat fish and not meat)?
d) The school cafeteria is serving a meat dish one lunchtime. What fraction of the children above will be able to eat this meal? $\frac{20}{37}$
e) How many children are there altogether? 37
f) Joe was a pescatarian but is now a vegetarian. Correct the diagram to show this.
2. Use the following information to complete the Venn Diagram below.

3 children listen to all three radio stations.

Of the 14 children that listen to the R'n'B station, 7 also listen to pop and 1 also listens to the classical station.

Of the 20 children that listen to the pop radio station, 6 listen to exclusively to this station.

2 children listen only to classical music.

a) How many children were surveyed?
b) In total, how many children listen to the classical radio station?
c) How many children do not listen to pop music?

## Scales

Complete the scales so that the dial matches the digital reading.


Calculating Angles - Triangles
Find the missing angles in the shapes and then write which type of triangle is shown.


1. A triangle has one angle of $90^{\circ}$ and another measuring $27^{\circ}$. What is the size of the third angle? $63^{\circ}$
a) What type of triangle is this? Right - angled triangle

## Calculating Angles - Quadrilaterals

Find the missing angles in the shapes and then write which type of quadrilateral is shown.


## Directions

1. If I am facing south and turn $90^{\circ}$ clockwise, which way will I be facing? West
2. If I'm facing north-east and turn $180^{\circ}$ anti-clockwise, which direction will I be facing? South - west
3. If I'm facing south-west and turn $45^{\circ}$ clockwise, which direction will I be facing? West
4. Which direction will I be facing if I turn $135^{\circ}$ anticlockwise when I started by facing east? North-west


S
5. Which direction will I be facing if I turn $135^{\circ}$ clockwise, starting by facing east?

> South-west
6. I turned $270^{\circ}$ clockwise and I am now facing west. Which direction was I facing before?

North
7. I turned $315^{\circ}$ anti-clockwise and ended up facing north-west. Which way was I facing originally? North

## Lines of Symmetry

Fill in the information for the shapes below and draw a tick inside the regular polygons.


No. of lines of symmetry: 3


No. of lines of symmetry: 5


No. of lines of symmetry: 8


No. of lines of symmetry: |


No. of lines of symmetry: 2


No. of lines of symmetry: 0

What is a regular polygon? $\qquad$ A shape where all sides and angles are equal.

## Diagonal Lines of Symmetry 1

Draw the reflections of the shapes below in the lines of symmetry.


## Diagonal Lines of Symmetry 2

Draw the reflections of the shapes below in the lines of symmetry.


## Area and Perimeter

Find the area and perimeter of each of the shapes below.


1. A rectangle is 5 m wide. It is three times as long as it is wide. What is the perimeter of the rectangle? 40 m
a) What is the area of the rectangle? $45 \mathrm{~m}^{2}$
2. A rectangle has an area of $45 \mathrm{~m}^{2}$. Its width is 5 m , what is its length? 9 m
b) What is the rectangle's perimeter?
3. Charlotte walks halfway around the edge a rectangular field. If she has walked 2,300 metres so far, what is the perimeter of the field? 4, 600 m or 4.6 km
4. A rug measures $1,800 \mathrm{~mm}$ by $2,300 \mathrm{~mm}$.
a) What is the perimeter? 8200 mm
b) What is its perimeter in centimetres? 820 cm
c) What is the area in centimetres squared? $41,400 \mathrm{~cm}^{2}$
5. A square has an area of $81 \mathrm{~cm}^{2}$. What is its perimeter? 36 cm
6. Base your answers on the flag diagram below.

a) What is the area of the shaded region? $240 \mathrm{~m}^{2}$
b) What is the area of the cross? $105 \mathrm{~m}^{2}$
c) What is the perimeter of the flag? 76 m
d) What is the perimeter of the cross? 76 m

7. The diagram above shows a path surrounding an area of lawn. The path is 4 metres wide.
a) What is the area of the lawn? $136 \mathrm{~m}^{2}$
b) What is the area of the whole garden? $400 \mathrm{~m}^{2}$
c) What is the area of the path? $264 \mathrm{~m}^{2}$
d) What is the perimeter of the whole garden? 82 m
8. Alistair draws a regular pentagon with sides of 75 mm . What is the perimeter of the shape? 375 mm
9. A square has an area of $10,000 \mathrm{~m}^{2}$. What is the length of one side? 100 m

Compound Area and Perimeter
Find the area and perimeter of each of the shapes below

$$
A=100 \mathrm{~cm}^{2}
$$

$P=44 \mathrm{~cm}$


$$
\begin{aligned}
& A=5000 \mathrm{~m}^{2} \\
& P=300 \mathrm{~m}
\end{aligned}
$$



Find the areas and perimeters of the shapes below.



## Volume

Calculate the volumes of the cuboids below.


1. What is the total surface area of shape $A$ ? $2(20 \times 10)+2(6 \times 10)+2(20 \times 6)$

$$
=760 \mathrm{~cm}^{2}
$$

2. What is the total surface area of shape $B$ ?
$2(10 \times 5)+2(5 \times 12)+2(12 \times 10)=460 \mathrm{~cm}^{2}$
3. If the sides of shape $B$ were twice as long, what would the volume be?

$$
20 \times 10 \times 24=4,800 \mathrm{~cm}^{3}
$$

4. How many faces does a cube have? 8
5. How many vertices does a cube have? 6
6. The area of one face of a cube is $49 \mathrm{~cm}^{2}$. What is the cube's volume? $\begin{aligned} & 7 \times 7 \times 7= \\ & 343 \mathrm{~cm}^{3}\end{aligned}$
7. A pool is 12 m long and 7 m wide. It is 1.5 m deep. What is its capacity? $126 \mathrm{~m}^{3}$
a) The floor of the pool is covered with tiles with an area of $0.25 \mathrm{~m}^{2}$ each. How many tiles would be needed to cover the floor of the pool?

$$
\begin{aligned}
& \text { Area }=84 \mathrm{~m}^{2} \\
& 84 \div \frac{1}{4}=84 \times 4=336 \text { tiles }
\end{aligned}
$$

## Review Quiz 1

1. A triangle has one angle of $98^{\circ}$ and another measuring $41^{\circ}$.
a) What is the size of the third angle? $41^{\circ}$
b) What type of triangle is this? I sou cells

2. A right-angled triangle has one angle of $26^{\circ}$.
a) What is the size of the third angle? $90^{\circ}$
b) What type of triangle is this? Right - angled triangle
3. Add a decimal point to this number so that the 3 has a value of three-hundredths:

### 11.5389

4. How many years are there in 228 months? 19
5. How many weeks are there in 252 days? 36
6. How many days are in the month of November? 30
7. Pin scored 43 out of 50 in her science test. What was her percentage score? $86 \%$
8. A rectangle has a width of 3.5 centimetres. Its length is twice its width. What is the area of the rectangle? $24.5 \mathrm{~cm}^{2}$
9. A square has a perimeter of 14 m . What is its area? $12.25 \mathrm{~m}^{2}$
10. A rectangle has a perimeter of 76 cm . The length of the rectangle is three times the width.
a) What is the length of the rectangle? 28.5 cm
b) What is the width? 9.5 cm
11. A rectangle has a perimeter of 45 cm . Its length is twice its width. What is its area?
12. In a rectangle, the ratio of length to width is $2: 1$. If the perimeter of the rectangle is 222 cm . What is the area of the rectangle? $2738 \mathrm{~cm}^{2}$
13. The perimeter of a square is 1026 cm . What is its length? 256.5 cm
14. The width of a rectangle is 8.75 m . This is one-third of its length. What is the perimeter of the rectangle? 70 m

## Review Quiz 2

1. A tailor makes leather jackets with 5 zips on each one.
a) If the tailor makes 32 jackets, how many zips will he use in total? 160
b) If the same tailor has a total of 217 zips, what is the maximum number of jackets he can make? 43
2. A car has travelled 140 km in the last week. On average, how far has it travelled each day? Write your answer in metres. $20 \mathrm{kem}=20,000 \mathrm{~m}$
3. How many times can you take 40 away from 1600? 40
4. Tennis balls are packed into tubes that can hold up to 3 balls. If I have 373 tennis balls, what is the minimum number of tubes I will need to hold all of my balls? 125
5. What number must be added to 832 to make it exactly divisible by 5 ? 3
6. What number must be added to 142 to make it exactly divisible by 3 ? 2
7. What number must be added to 961 to make it exactly divisible by 6 ? $S$
8. What number must be subtracted from 1438 to make it exactly divisible by 20 ?
9. Jamie is 128 cm tall. Cathy is 130.4 cm tall. Maria is exactly halfway between Jamie and Cathy's heights. How tall is Maria? 129.2 cm
10. In a Chinese city, the average summer's day is $38^{\circ} \mathrm{C}$ hotter than the average winter's day. If the average temperature in winter is $-10^{\circ} \mathrm{C}$, what is the average temperature in summer? $28^{\circ} \mathrm{C}$
11. Multiply 65 by itself and subtract 65 from the answer. 4160
12. By how much is the product of 17 and 92 greater than their sum? 1455
13. A group of friends is comparing how many books each of them owns. They have made a tally of the results. How many books do the friends own on average? 3


## Review Quiz 3

1. Divide 37 centimetres into 5 equal parts. 7.2 cm
2. What is 2,345 metres rounded to the nearest hundred? 2,300
3. Round 1.906 to the nearest tenth. 1. 9
4. Write all of the factors of $28.1,2,4,7,14,28$
5. Write three prime numbers that are larger than 10 . Any, E.g.11, 13, $17,19,23,29$, etc
6. In a choir of 20 children, there are 13 boys. What percentage of the choir are girls? $35 \%$
7. A multi-pack of crisps contains 3 Salt \& Vinegar packets, 7 Ready Salted and 5 Cheese \& Onion packets. If $I$ remove one packet, what is the probability that it is a packet of Salt \& Vinegar? Write your answer in its simplest form. $\frac{3}{15}=\frac{1}{5}$
a) Anna has removed one packet of Salt \& Vinegar from the same multi-pack of crisps. What is the probability that the next packet of crisps that she removes is Ready Salted? $\frac{7}{14}=\frac{1}{2}$

$$
\text { Median }=17.5
$$

8. Find the mean and median of the following numbers: $20,16,13,19$. Mean :

## Review Quiz 4

$$
\frac{20+16+13+19}{4}=\frac{68}{4}=17
$$

1. John is 4 years older than Christine. Their ages add up to 56 . How old will John be in 2 years' time? $56-4=52_{26+4=30}$

2. In a group of 200 students, 38 got an $\mathrm{A}^{*}$ in their English exam. What percentage of the group is this? $19 \%$
3. ATV originally cost $£ 500$. In a sale, the price has been reduced by $15 \%$. Sophia buys the $T V$ in the sale and uses a $£ 30$ gift voucher. How much does she have left to pay $? £ 395$
4. Morgan has $\mathbf{a} 0.45$ litre bottle of cough syrup. How many 50 millilitre doses will Morgan get from this bottle?
5. Subtract 3 g from 1.6 kg . Write your answer in kilograms. 1.597 kg
6. $3,085 \div 20=154 \cdot 25$
7. I'm thinking of a number. I find one-third of my number and add 17. My answer is 21 . What number was I thinking of? $\square$ $\div 3 \rightarrow+17 \rightarrow 21$
8. What number if halfway between 144 and 206.5 ? $175 \cdot 25$
