

Unit 2

THE FOUR OPERATIONS 1

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M

What number belongs in the empty box?

1 \rightarrow $+4$ \rightarrow 7

3 \rightarrow $+7$ \rightarrow 10

5 \rightarrow $+3$ \rightarrow 12

7 \rightarrow -6 \rightarrow 10

9 \rightarrow -4 \rightarrow 14

11 \rightarrow $\times 3$ \rightarrow 6

13 \rightarrow $\times 4$ \rightarrow 16

15 \rightarrow $\times 6$ \rightarrow 18

17 \rightarrow $\div 2$ \rightarrow 6

19 \rightarrow $\div 10$ \rightarrow 3

2 \rightarrow $+8$ \rightarrow 13

4 \rightarrow $+9$ \rightarrow 15

6 \rightarrow -5 \rightarrow 4

8 \rightarrow -7 \rightarrow 12

10 \rightarrow -8 \rightarrow 9

12 \rightarrow $\times 5$ \rightarrow 20

14 \rightarrow $\times 10$ \rightarrow 40

16 \rightarrow $\div 3$ \rightarrow 4

18 \rightarrow $\div 5$ \rightarrow 5

20 \rightarrow $\div 4$ \rightarrow 2

E

What number belongs in the empty box?

1 \rightarrow -9 \rightarrow 13

3 \rightarrow $+13$ \rightarrow 26

5 \rightarrow $+24$ \rightarrow 40

7 \rightarrow -20 \rightarrow 19

9 \rightarrow $+25$ \rightarrow 39

11 \rightarrow $\times 7$ \rightarrow 42

13 \rightarrow $\div 8$ \rightarrow 4

15 \rightarrow $\div 9$ \rightarrow 6

17 \rightarrow $\times 7$ \rightarrow 28

19 \rightarrow $\div 11$ \rightarrow 8

2 \rightarrow $+17$ \rightarrow 31

4 \rightarrow -12 \rightarrow 20

6 \rightarrow -11 \rightarrow 28

8 \rightarrow -15 \rightarrow 32

10 \rightarrow $+36$ \rightarrow 53

12 \rightarrow $\times 8$ \rightarrow 72

14 \rightarrow $\times 11$ \rightarrow 55

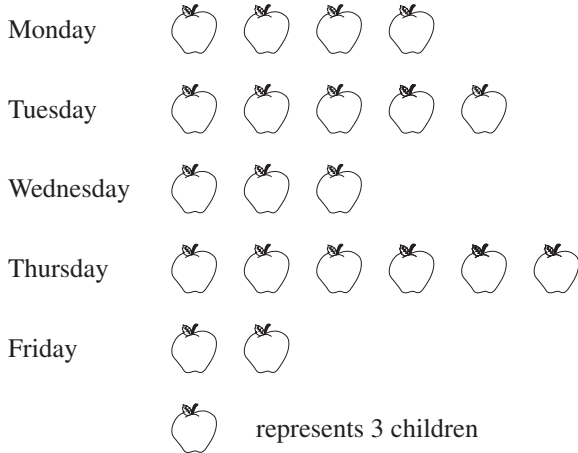
16 \rightarrow $\div 8$ \rightarrow 6

18 \rightarrow $\times 9$ \rightarrow 63

20 \rightarrow $\div 7$ \rightarrow 8

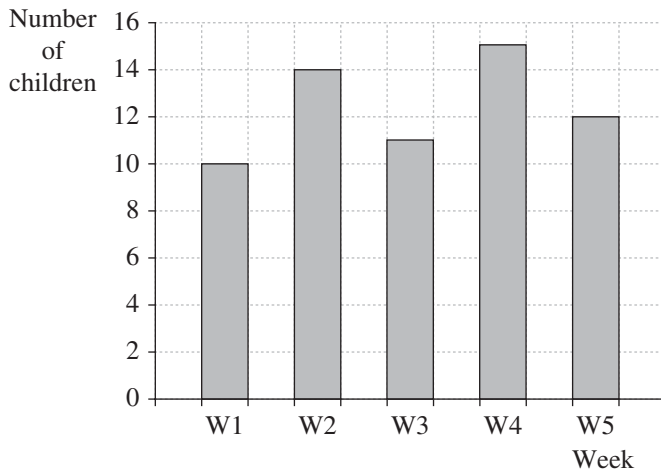
M/E

1 This pictogram shows how many children in class 7B ate an apple during the school week.



- (a) How many children ate apples on Wednesday?
- (b) How many more children ate apples on Thursday than on Monday?
- (c) On which day did least children eat an apple?
- (d) How many fewer children ate an apple on Wednesday than on Tuesday?

2 This graph shows the number of children attending a football club each week.



- (a) How many children went to football club in week 2?
- (b) How many children went to football club in week 3?
- (c) How many more children went to football club in week 4 than in week 1?
- (d) How many children went to football club in total during weeks 1 to 5?

3 The children in class 7A were asked what their favourite subject was, English (E), Maths (M), PE (P), Art (A) or History (H). These are the results.

A	M	P	H	A	E	M	M	A	P
H	E	A	P	H	H	E	P	H	M
M	A	P	P	E	M	A	A	P	A

Copy and complete the frequency table and then draw a bar chart to show the results.

subject	tally	frequency
E		4
M		
P		
A		
H		

PROBABILITY 1**Main Book page 44****M**

For each of these statements write one of these probabilities.

impossible unlikely even chance likely certain

- 1 When a coin is tossed it will show 'tails'.
- 2 The sun will rise tomorrow.
- 3 You will blink your eyes in the next minute.
- 4 Your next Christmas present will be delivered by a snowman.
- 5 You roll a dice and get an odd number.
- 6 It will rain in November.
- 7 You will be captured by aliens tonight.
- 8 You will be given homework in the next 3 months.

**E**

Draw the probability scale.

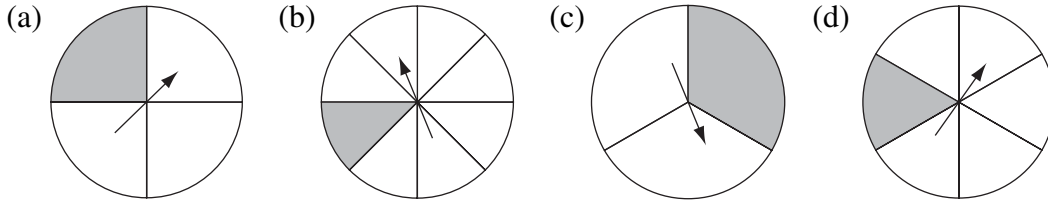
impossible unlikely evens likely certain

Draw an arrow on the scale to show the chance of each event below happening.

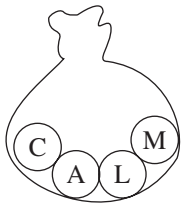
- 1 The day after Monday will be Tuesday.
- 2 You will grow an extra leg tonight then win the next Olympics 100 m race.
- 3 England will win the next World Cup at football.
- 4 You will get at least one birthday card when you have your next birthday.
- 5 Your maths teacher has a black belt in Judo.
- 6 When a coin is tossed it will show 'heads'.
- 7 You will find a tarantula in your bed tonight
- 8 In the next TV series, Doctor Who will defeat the aliens and save the planet.

M

1 What is the probability that each spinner will land on a shaded part?



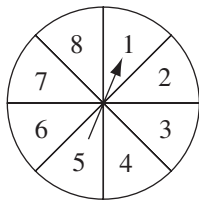
2 There are four identical beads in a bag. I take out one bead.



- (a) What is the probability of taking out A?
- (b) What is the probability of taking out M?

3 Work out the probability of spinning a coin and getting 'tails'.

4 Using this spinner, what is the probability of getting:



- (a) the number 7
- (b) the number 5?

E

1 Tania shuffles these cards then picks one out. What is the probability that she picks:



- (a) The letter H
- (b) The letter M
- (c) A vowel

2 These 7 balls are mixed up in a bag. Rosa picks out one ball. What is the probability that she picks:

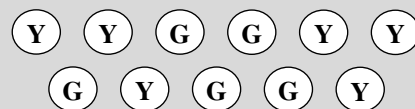


- (a)
- (b)
- (c)

3 There are 17 beads in a bag. 8 beads are red, 5 beads are blue and 4 beads are green. I take out one bead. Find the probability of:

- (a) taking out a green bead.
- (b) taking out a red or blue bead.
- (c) taking out a white bead.
- (d) taking out a red or green bead.

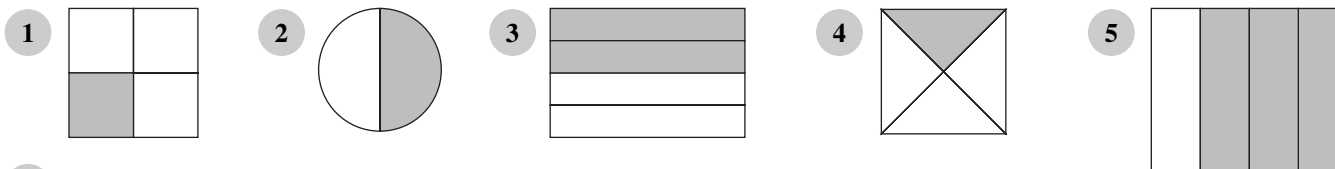
4 There are eleven balls in a bucket. I take out one ball. What is the probability of taking out:



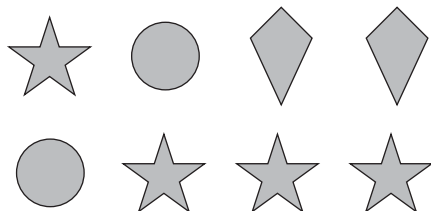
- (a)
- (b)
- (c) or

M

What fraction of each shape is shaded?

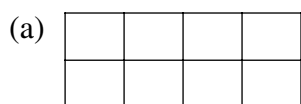


6 Copy and complete these sentences by writing the fractions in words.

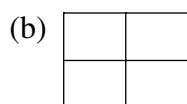


- (a) of these shapes are stars.
 (b) of these shapes are circles.
 (c) of these shapes are *not* circles.
 (d) of these shapes are *not* stars.

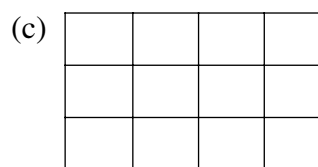
7 Copy each grid.



Shade $\frac{3}{4}$ of the squares.



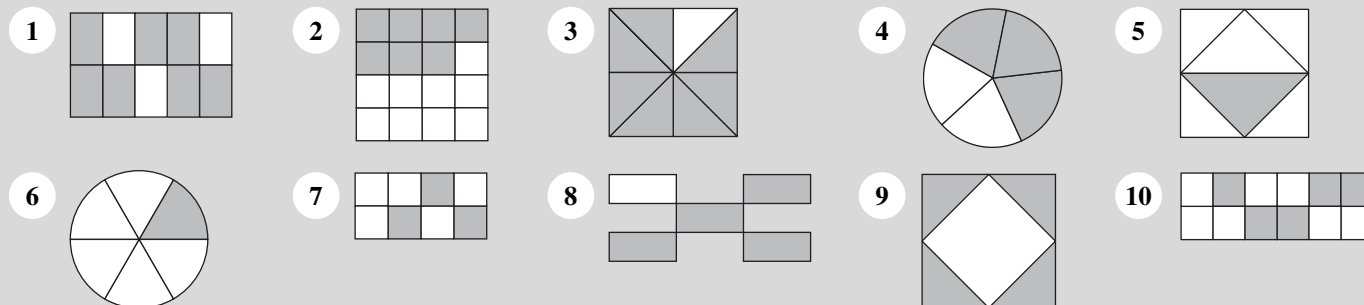
Shade $\frac{1}{2}$ of the squares.



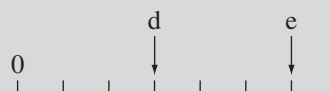
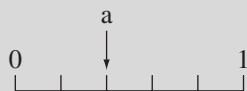
Shade $\frac{1}{3}$ of the squares.

E

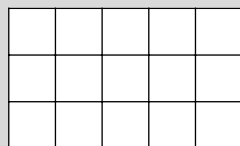
What fraction of each diagram is: (a) shaded (b) unshaded?



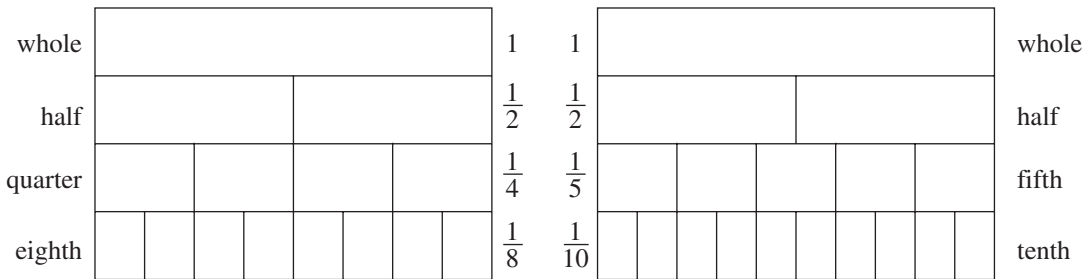
11 What fractions are shown on each of the number lines?



12 Copy this grid and shade $\frac{3}{5}$ of the squares.



M



Use the fraction charts to copy and complete by filling in each box below.

1 $\frac{1}{4} = \frac{2}{\square}$

2 $\frac{1}{2} = \frac{\square}{8}$

3 $\frac{2}{5} = \frac{\square}{10}$

4 $\frac{1}{2} = \frac{5}{\square}$

5 $\frac{4}{5} = \frac{\square}{10}$

6 $1 = \frac{4}{\square}$

7 $\frac{3}{4} = \frac{\square}{8}$

8 $1 = \frac{\square}{5}$

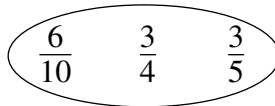
9 $1 = \frac{8}{\square}$

10 $\frac{8}{\square} = \frac{4}{5}$

11 $\frac{\square}{10} = \frac{1}{5}$

12 $\frac{\square}{4} = \frac{1}{2}$

13 Which fraction is the odd one out?



E



Use the fraction chart to copy and complete by filling in each box below.

1 $\frac{3}{10} = \frac{\square}{100}$

2 $\frac{20}{100} = \frac{2}{\square}$

3 $\frac{7}{10} = \frac{\square}{100}$

4 $\frac{80}{\square} = \frac{8}{10}$

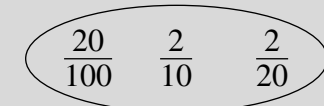
5 $\frac{50}{\square} = \frac{5}{10}$

6 $\frac{\square}{100} = \frac{6}{10}$

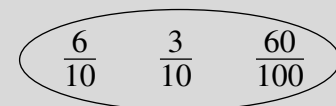
7 $1 = \frac{\square}{100}$

8 $\frac{9}{10} = \frac{\square}{100}$

9 Which fraction is the odd one out?



10 Which fraction is the odd one out?

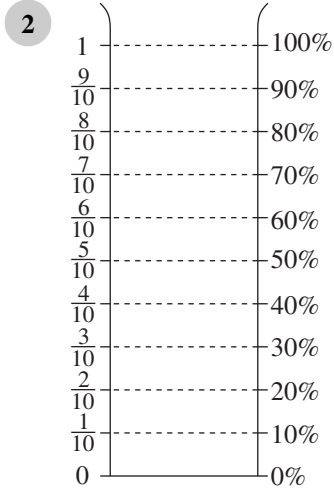


PERCENTAGES

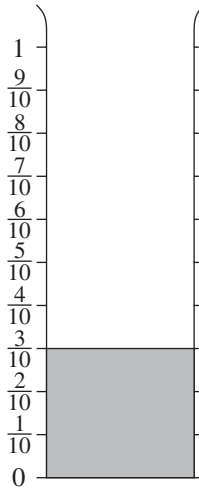
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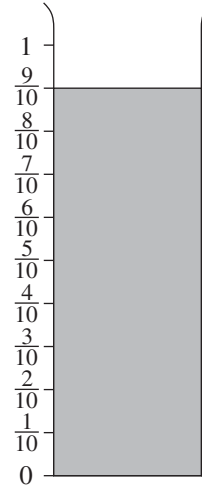
- 1 Answer true or false.
 (a) 50% is equal to $\frac{1}{2}$ (b) 28% is more than $\frac{1}{4}$ (c) 70% is more than $\frac{3}{4}$ (d) 75% is equal to $\frac{3}{4}$



(a) What percentage of the beaker is full?



(b) What percentage of the beaker is full?



- 3 Answer true or false.
 (a) 40% is equal to $\frac{4}{10}$ (b) $\frac{7}{10}$ is equal to 70% (c) 35% is more than $\frac{3}{10}$ (d) 82% is more than $\frac{8}{10}$

E

For each shape, write down the shaded area as:

(a) a fraction (b) a percentage

1

2

3

4

5

6

7

8

9 Some people were asked if they exercise each week. $\frac{6}{10}$ of the people said they did. What percentage of the people said they did *not*?

10 $\frac{4}{5}$ of people say they like eating fish. What percentage of people do *not* like eating fish?

11 $\frac{3}{4}$ of the children in a school live in the town. What percentage of the children do *not* live in the town?

M

Remember: $25\% = \frac{1}{4}$ $50\% = \frac{1}{2}$ $75\% = \frac{3}{4}$

- 1 Find 10% of:
 (a) 40 (b) 50 (c) 80 (d) 10 (e) 200 (f) 400
- 2 Find 20% of:
 (a) 40 (b) 80 (c) 10 (d) 200 (e) 70 (f) 90
- 3 Find 60% of:
 (a) 40 (b) 80 (c) 30 (d) 70 (e) 200 (f) 60
- 4 Find 5% of:
 (a) 40 (b) 80 (c) 200 (d) 120 (e) 600 (f) 400
- 5 Find 50% of:
 (a) 16 (b) 30 (c) 28 (d) 32 (e) 64 (f) 150
- 6 Find 25% of:
 (a) 20 (b) 40 (c) 12 (d) 24 (e) 44 (f) 100

E

Work out

- 1 50% of £14
- 2 10% of 30p
- 3 5% of 80p
- 4 25% of £16
- 5 20% of 50p
- 6 20% of £180

Find the sale price for each item below.

7 shoes £48
SALE
25% off

8 laptop £600
SALE
5% off

9 dvd player £120
SALE
75% off

10 dishwasher £440
SALE
20% off

11 coat £90
SALE
30% off

12 TV £720
SALE
10% off

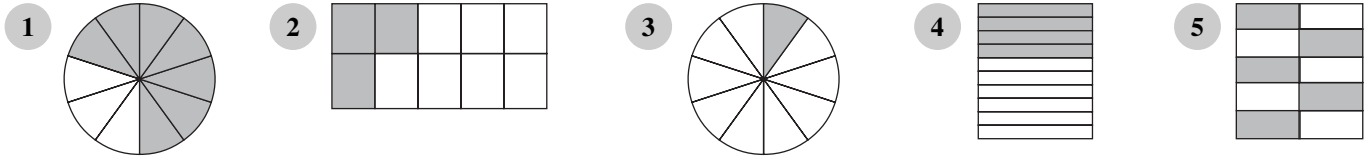
13 computer £640
SALE
20% off

14 phone £130
SALE
50% off

15 radio £70
SALE
40% off

M

What part of each shape is shaded? Write your answer as a fraction and as a decimal fraction.

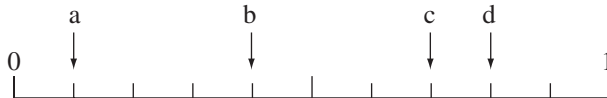


6 Example: $0.\underline{9}3$ the underlined 9 is $\frac{9}{10}$

Give the value of the underlined figure in each of these numbers.

- (a) $3.\underline{6}$ (b) $4.\underline{8}$ (c) $\underline{7}.3$ (d) $\underline{1}2.8$ (e) $5.\underline{3}7$
 (f) $\underline{9}.49$ (g) $\underline{1}8.4$ (h) $7.\underline{9}6$ (i) $10\underline{4}.6$ (j) $26.\underline{3}5$

7 Write the fraction and decimal fraction shown by each arrow below.



E

Remember: $0.01 = \frac{1}{100}$

Give the value of the underlined figure in each of these numbers.

- 1 $0.\underline{8}$ 2 $\underline{5}.36$ 3 $4.\underline{8}5$ 4 $\underline{1}2.6$ 5 $19.\underline{8}$
 6 $6.1\underline{2}$ 7 $3.6\underline{7}$ 8 $\underline{1}4.16$ 9 $17.\underline{3}8$ 10 $15.0\underline{3}$
 11 $15.\underline{2}3$ 12 $\underline{1}23.47$ 13 $\underline{1}58.4$ 14 $236.\underline{5}4$ 15 $312.\underline{4}9$

16 Write the next 3 terms in each sequence.

(a) 2.5 2.3 2.1

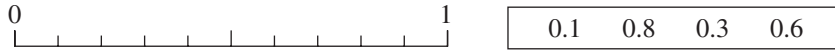
(b) 1.1 1.3 1.5 1.7

17 Work out

- (a) $1.8 + 0.6$ (b) $0.9 + 2.6$ (c) $3.4 - 0.7$ (d) $2.3 - 0.6$
 (e) $3.3 - 2.6$ (f) $3.1 - 0.4$ (g) $2.7 + 2.4$ (h) $1.8 + 1.6$
 (i) $1.7 + 2.8$ (j) $4.3 - 2.4$ (k) $3.2 - 2.7$ (l) $4.6 + 2.5$

M

- 1 Copy the line. Put each number from the box on the number line.



- 2 Write the smaller of these pairs of numbers.

(a) 1.6 0.6 (b) 3.0 1.3 (c) 1.7 7 (d) 2.4 4.2 (e) 4 0.4 (f) 4.7 7.4

- 3 Write true or false.

(a) 0.9 is greater than 7 (b) 1.9 is less than 2 (c) 2.5 is less than 3.2 (d) 5 is more than 0.6

- 4 Put these decimals in order. Start with the smallest number.

(a) 5.2 3.8 2.4 6.1 (b) 3.6 36 6 6.3 (c) 62 6.2 2.6 26
 (d) 4.8 4.4 8.4 8.8 (e) 9.7 7 9 7.9 (f) 2.8 2 2.2 8.2

E

- 1 Copy the line. Put each number from the box on the number line.



- 2 Arrange the numbers below in order of size, smallest first.

(a) 0.21 0.31 0.12 (b) 0.04 0.4 0.35 (c) 0.75 0.57 0.7
 (d) 0.8 0.28 0.82 (e) 0.04 0.14 0.2 0.53 (f) 1.2 0.12 0.21 1.12
 (g) 0.62 0.26 0.61 0.3 (h) 2.3 2.03 2.38 3.8 (i) 6.43 6.34 6.3 6
 (j) 4.79 4.9 4 4.97

- 3 Here are numbers with letters.

Put the numbers in order, smallest first.

V	H	O	W
0.1	0.3	0.07	0.35

Write down just the letters to make a sentence.

E	I	K	L
0.12	0.01	0.45	0.02