

Think

6

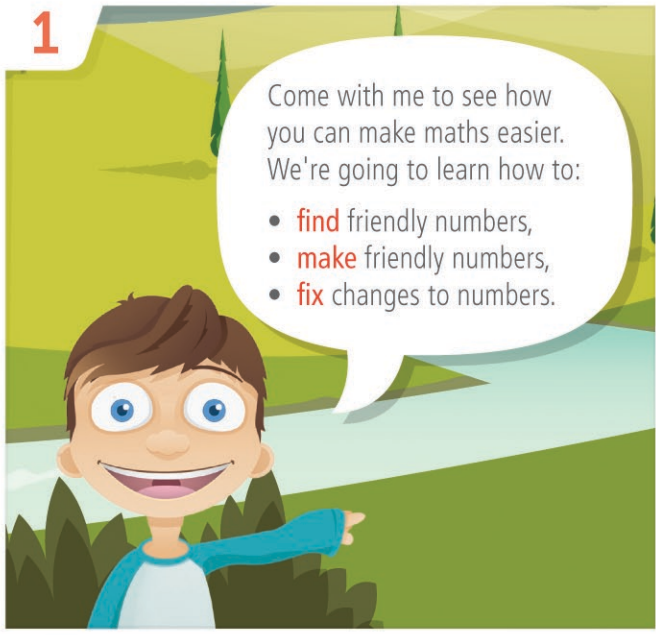
MENTALS™

Maths Strategies and Practice



Making Maths Friendly

1



Come with me to see how you can make maths easier. We're going to learn how to:

- **find** friendly numbers,
- **make** friendly numbers,
- **fix** changes to numbers.

2



Friendly numbers end in 0. They are easy to work with.

- 10 is friendlier than 9
- 40 is friendlier than 38
- 70 is friendlier than 71
- 9.0 is friendlier than 8.9
- $\$3.00$ is friendlier than $\$3.05$

3



Let's practise **finding friendly numbers**. Tick the calculation that is easier to do in each pair, then circle the friendly numbers.

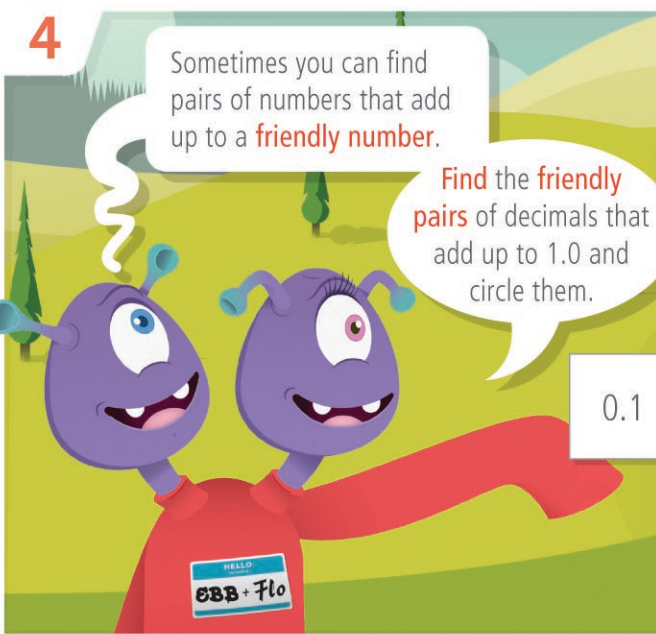
$57 + 9$ or $56 + 10$

$40 + 12$ or $38 + 14$

$66 - 19$ or $67 - 20$

$895 - 16$ or $900 - 21$

4



Sometimes you can find pairs of numbers that add up to a **friendly number**.

Find the **friendly pairs** of decimals that add up to 1.0 and circle them.

$0.5 + 0.9 + 0.5$ **friendly pair**

$0.4 + 0.2 + 0.8$

$0.7 + 0.3 + 0.1$

$0.1 + 0.9 + 0.6$

$0.4 + 0.5 + 0.6$

$0.8 + 0.2 + 0.2 + 0.8$

5

What if I can't **find** a friendly number?

$128 + 19$

?

$95 + 17$

$46 - 9$

Don't worry, there's not always a friendly number to find – sometimes you need to **make** a friendly number.

First you need to look for a number that can be made friendly.

6

Find the number in each addition that is easy to make friendly, then circle it.

$\textcircled{49} + 35$

$61 + 85$

$477 + 302$

$397 + 144$

7

Now, change these numbers to **make** them friendly and show how you did it.

change

friendly

49

+1

50

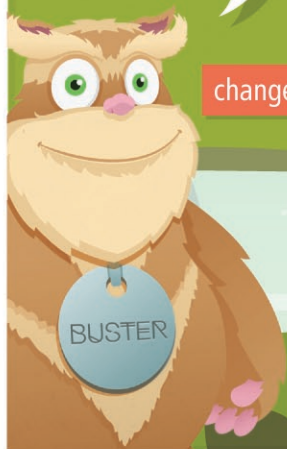
61

302

397

8

You can **fix** a change by doing the opposite of what you did to **make** a number friendly. **Fix** the change in these additions.



change

$$\begin{array}{r} 49 + 35 \\ \text{+1} \quad \text{-1} \\ \hline 50 + 34 \end{array}$$

fix

$$\begin{array}{r} 61 + 85 \\ \text{-1} \quad \square \\ \hline 60 + \square \end{array}$$

$$\begin{array}{r} 477 + 302 \\ \square \quad \text{-2} \\ \hline \square + 300 \end{array}$$

$$\begin{array}{r} 397 + 144 \\ \text{+3} \quad \square \\ \hline 400 + \square \end{array}$$

9



You can also **make** friendly numbers by breaking larger numbers into place values.

Can you **make** these numbers friendly?

$$265 = 200 + 60 + 5$$

$$714 =$$

$$382 =$$

$$950 =$$

10

How did you go?
Tick the boxes below to show what you know!



- A friendly number ends in a 0
- Friendly numbers make maths easier
- How to **find** friendly numbers
- How to **make** friendly numbers
- How to **fix** my changes

11

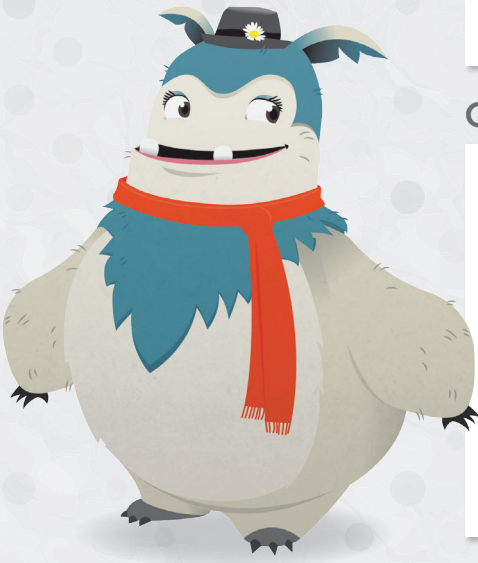
Well done!
Now that you know the basics, let's get started.



+ Addition Strategy

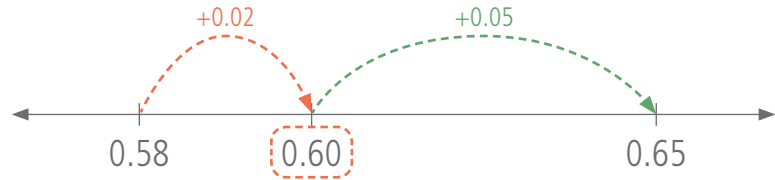
Friendly Jumps

Make a number line in your head to 'jump' along.



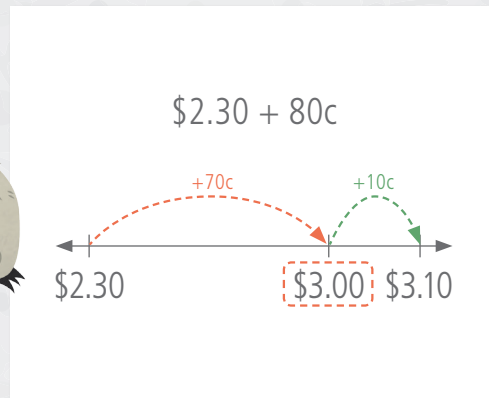
1 Jump forward to a friendly number.

$$0.58 + 0.07$$



2 Jump forward the rest.

Other Examples



Day 1

- 1 $\$4.50 + 70c$
- 2 $180 + 60$
- 3 $960 + 75$
- 4 $0.37 + 0.04$
- 5 $698 + 22$
- 6 $0.95 + 0.08$
- 7 $\$4.40 + 65c$
- 8 $130 + 85$
- 9 $0.57 + 0.06$

- 11 $\$2.40 + 70c$
- 12 $1155 + 6$
- 13 $8.32 + 0.09$
- 14 $0.28 + 0.07$
- 15 $\$6.50 + 65c$
- 16 $\$3.97 + 6c$
- 17 $\$1.80 + 70c$
- 18 $12.57 + 0.04$
- 19 $230 + 77$

10 How much is a pie with sauce?

pie \$5.80
 Chips \$4.30
 Sauce 25c
 Drink \$3.00

20 The school high jump record is 1.28 m and Ashton beat the record by 0.08 m. What is the new record height?

Practice

Q1-20: /20

My time:

Day 2

1 $150 + 80$

2 $\$4.70 + 60c$

3 $3.5 + 0.7$

4 $9.25 + 0.06$

5 $\$3.30 + 80c$

Practice

6 60×300

7 400×4

8 $200 - 55$

9 $350 - 60$

10 $\frac{1}{3}$ of 21

Revision

11 Write kilometres in abbreviated form.

12 Write three million as a numeral.

13 What is the next number in this pattern?

3.4 4.1 4.8 5.5

14 What is the repeated gap in the pattern?

+7 +0.7 +0.07

15 Which of these numbers has the greater value?

4 000 200 900 200

16 Which digit is in the thousands place in 34 217 900?

17 Write the measurement that is abbreviated as kg in word form.

18 Which of the labelled cities in Japan is located the furthest north?

19 Which city is at map reference D4?

20 What is the compass direction from Kyoto to Hiroshima?



Day 3

1 $380 + 45$

2 $\$7.70 + 50c$

3 $510 + 95$

4 $0.87 + 0.06$

5 $3.3 + 0.8$

Practice

6 900×50

7 70×70

8 $\$240 - \80

9 $500 - 55$

10 $\frac{1}{8}$ of 32

Revision

11 Write sixty million as a numeral.

12 Name the compass point midway between south and east.

13 What is the next number in this pattern?

0.08 0.11 0.14 0.17

14 What is the repeated gap in the pattern?

+3 +0.3 +0.03

15 Write the measurement that is abbreviated as mm in word form.

16 Write centimetres in abbreviated form.

17 Which digit is in the millions place in 75 600 318?

18 Which of these numbers has the greater value?

55 500 500 500

19 How many zeros are used to write ten million as a numeral?

20 Write the map reference for Sendai.

Q1-10:

/10

11-20:

/10

My time:

Q1-10:

/10

11-20:

/10

My time:

Day 4

1 $\$1.80 + 55c$

2 $660 + 60$

3 $7.6 + 0.5$

4 $0.95 + 0.25$

5 $\$8.90 + 60c$

Practice

6 70×3000

7 200×50

8 $950 - 60$

9 $520 - 40$

10 $\frac{1}{4}$ of 28

Revision

11 Which of these numbers has the greater value?
 200 000 200 80 000 800

12 Write millilitres in abbreviated form.

13 Write nine hundred million as a numeral.

14 The thickness of the wire on a paperclip is about:
 1 mm 1 cm 1 m 1 km



15 What is the next number in this pattern?
 0.10 0.25 0.40 0.55

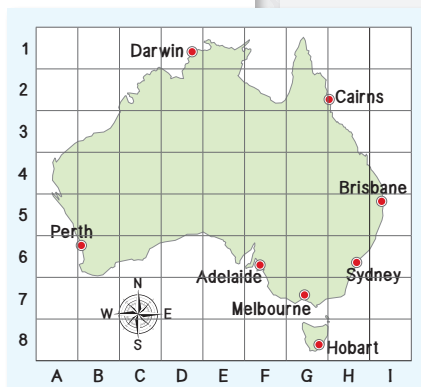
16 What is the repeated gap in the pattern?

17 Write forty-four million as a numeral.

18 Which digit is in the ten thousands place in 627 930?

19 A flight from Sydney to Adelaide to Hobart travels in which two directions?

20 Which three cities have a map reference ending with 6?



Day 5

1 $0.48 + 0.07$

2 $\$3.50 + 80c$

3 $\$10.90 + 50c$

4 $0.95 + 0.15$

5 $0.29 + 0.09$

6 $\$1.60 + 45c$

7 $5.5 + 0.6$

8 $480 + 40$

9 $\$8.80 + 25c$

10 $\$2.30 + 80c$

Assessment

11 What is the next number in this pattern?
 0.82 0.87 0.92 0.97

12 What is the repeated gap in the pattern?

13 Write eight hundred and twenty-one million as a numeral.

14 Write kilograms in abbreviated form.

15 Which of these numbers has the greater value?
 337 300 73 700

16 Which digit is in the hundred thousands place in 77 195 820?

17 A jelly bean has a mass of about:
 one gram one kilogram one tonne

18 Which of the labelled cities is located the furthest south?

19 What is the compass direction from Cairns to Perth?

20 Which state capital is north-west of Melbourne?

Q1-10: /10

11-20: /10

My time:

Q1-10: /10

11-20: /10

My time:


Addition Strategy

Friendly Balance

Move amounts from one number to another to make easy additions.



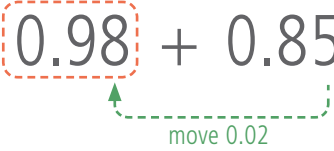
1 Find a number to make friendly.

2 Make a friendly number.

Moving part of a number keeps the addition balanced.


3 Calculate.

$$\begin{array}{r}
 0.98 + 0.85 \\
 \hline
 = 1.00 + 0.83 \\
 \hline
 = 1.83
 \end{array}$$




Other Examples

$$\begin{array}{r}
 14.4 + 2.7 \\
 \hline
 = 14.1 + 3.0 \\
 \hline
 = 17.1
 \end{array}$$



$$\begin{array}{r}
 \$6.75 + \$5.30 \\
 \hline
 = \$7.00 + \$5.05 \\
 \hline
 = \$12.05
 \end{array}$$



Day 1

1 $0.99 + 0.26$

2 $5.2 + 2.9$

3 $\$1.75 + 50c$

4 $598 + 55$

5 $\$1.95 + \1.25

6 $0.98 + 0.17$

7 $290 + 320$

8 $\$8.90 + \1.20

9 $69 + 71$

10 Hal's height is 139 cm.
Buster is 21 cm taller.
What is Buster's height?

11 $490 + 510$

12 $5.2 + 1.9$

13 $\$4.80 + \1.30

14 $151 + 149$

15 $299 + 201$

16 $7.9 + 8.1$

17 $99c + 46c$

18 $\$2.55 + \2.45

19 $695 + 205$

20 Anna swam her first 50 m lap in 24 seconds and her second lap in 26 seconds. How long did Anna take to swim 100 m?

Practice

Q1–20:

/20

My time:

Day 2

1 $98c + 52c$

2 $4.9 + 2.1$

3 $0.51 + 0.49$

4 $\$7.90 + \1.10

5 $89 + 91$

Practice

6 99×3

7 99×5

8 $84 - 39$

9 $67 - 29$

10 $\frac{1}{6}$ of 18

Revision

11 Calculate the perimeter of this blue rectangle.



12 What is its area?

13 Round 6296 to the nearest hundred.

14 Round 6296 to the nearest thousand.

15 Name the compass point midway between north and east.

16 Which direction is a quarter turn anticlockwise from north?

17 Circle the four factors of 15.

1 2 3 5 8 10 15

18 List the four factors of 8.

19 When does the Sydney Ferry stop at Taronga Zoo on Monday?

20 How long does the ferry journey between Manly and Taronga Zoo take?

Day 3

1 $0.98 + 0.66$

2 $\$4.20 + \3.80

3 $595 + 605$

4 $\$7.75 + 50c$

5 $0.19 + 0.21$

Practice

6 999×2

7 999×7

8 $490 - 95$

9 $605 - 295$

10 $\frac{1}{9}$ of 81

Revision

11 Round 8845 to the nearest 100.

12 Round 8845 to the nearest 1000.

13 Calculate the perimeter of a picture frame measuring 30 cm by 40 cm.

14 Work out the area of the glass for a picture frame with the same dimensions.

15 Name the compass point midway between south-east and south-west.

16 Which direction is opposite north-west?

17 List the six factors of 50.

18 On which days does the Sydney Ferry stop at Taronga Zoo and Darling Harbour?

19 Can you catch a ferry from Circular Quay to Darling Harbour on Thursday?

20 What time does the ferry arrive at Darling Harbour on Wednesday?

| | Circular Quay | Manly | Taronga Zoo | Darling Harbour | Circular Quay |
|--------------------|---------------|---------|-------------|-----------------|---------------|
| Afternoon services | | | | | |
| Monday | 3:00 pm | 3:30 pm | 4:00 pm | 5:10 pm | 5:20 pm |
| Tuesday | 3:00 pm | 3:30 pm | | | 4:55 pm |
| Wednesday | 3:00 pm | 3:30 pm | 4:00 pm | 5:10 pm | 5:20 pm |
| Thursday | 3:00 pm | 3:30 pm | | | 4:55 pm |
| Friday | 3:00 pm | 3:30 pm | 4:00 pm | 5:10 pm | 5:20 pm |

Q1-10: /10

11-20: /10

My time:

Q1-10: /10

11-20: /10

My time:

Day 4

1 $28c + 32c$

2 $6.9 + 7.1$

3 $\$3.95 + \1.05

4 $0.99 + 0.51$

5 $590 + 210$

Practice

6 4×999

7 8×99

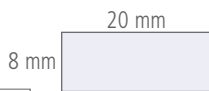
8 $93 - 48$

9 $82 - 19$

10 $\frac{1}{7}$ of 56

Revision

11 Calculate the perimeter of this purple rectangle.



12 What is its area?

13 The distance from Sydney to L.A. is 12 065 km. Round it to the nearest 100 km.

14 Round the flight distance from Sydney to L.A. to the nearest 1000 km.

15 List the four prime numbers between 10 and 20.

16 List the eight factors of 40.

17 Which direction is a $\frac{1}{4}$ turn anticlockwise from north-west?

18 How far is ten laps around a sports field that is 100 m long and 50 m wide?

19 How long does the round trip from Circular Quay to Circular Quay take on Tuesday?

20 How much travel time is saved on the round trip on Tuesday compared to Wednesday?

Day 5

1 $0.24 + 0.26$

2 $5.4 + 4.9$

3 $\$2.95 + 90c$

4 $\$8.90 + \1.10

5 $99c + 39c$

6 $245 + 255$

7 $4.8 + 1.2$

8 $\$4.95 + \3.55

9 $\$5.75 + 50c$

10 $698 + 702$

11 Round 5150 to the nearest hundred.

12 Round 5150 to the nearest thousand.

13 Write the two prime numbers between 20 and 30.

14 $\frac{1}{8}$ of 64 =

15 Calculate the perimeter of a swimming pool measuring 5 m by 10 m.

16 What is the area of a swimming pool with the same dimensions?

17 Circle the six factors of 18.

1 2 3 6 9 12 18

18 What time on Friday does the Sydney Ferry reach Darling Harbour?

19 How long does the ferry journey between Taronga Zoo and Circular Quay take?

20 The ferry left Manly 10 minutes late on Tuesday. When should it be expected at Circular Quay?

Assessment

| Sydney Ferry Company | | | | | |
|----------------------|---------------|---------|-------------|-----------------|---------------|
| Afternoon services | Circular Quay | Manly | Taronga Zoo | Darling Harbour | Circular Quay |
| Monday | 3:00 pm | 3:30 pm | 4:00 pm | 5:10 pm | 5:20 pm |
| Tuesday | 3:00 pm | 3:30 pm | | | 4:55 pm |
| Wednesday | 3:00 pm | 3:30 pm | 4:00 pm | 5:10 pm | 5:20 pm |
| Thursday | 3:00 pm | 3:30 pm | | | 4:55 pm |
| Friday | 3:00 pm | 3:30 pm | 4:00 pm | 5:10 pm | 5:20 pm |

Q1–10: /10

11–20: /10

My time:

Q1–10: /10

11–20: /10

My time:

Day 1

- 1 $\$5.50 + 70c$
- 2 $280 + 60$
- 3 $970 + 35$
- 4 $0.87 + 0.04$
- 5 $198 + 22$
- 6 $0.95 + 0.06$
- 7 $10.52 + 0.09$
- 8 $0.78 + 0.07$
- 9 $1050 + 60$
- 10 $460 + 65$

Revision

11 The inverse of $\square \times 4 = 120$ is $120 \div 4 = \square$.
Write the inverse of $\square \times 7 = 420$, then solve.

12 Write the inverse of $\square \times 6 = 480$, then solve.

13 Which shape shows a flip to the right?



14 Which shape shows a slide to the right?



15 Which shape shows a quarter-turn clockwise?



16 Write the probability of tossing a coin for tails as a fraction.

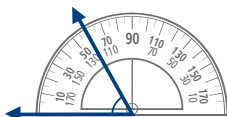
17 Write as a fraction the probability of winning a raffle in which 5000 tickets were sold and you bought three tickets.

18 Marcy bought a box of cupcake mix for \$4.45. How much change from \$5 should she get?

19 Draw two more notes to make the total exactly \$50.



20 What is the size of this angle?
 60° 120° 180°



Day 2

- 1 $\$8 - \1.15
- 2 $3 - 0.45$
- 3 $\$10 - \1.50
- 4 $\$1.80 - 55c$
- 5 $\$10 - \5.50
- 6 $1 - 0.65$
- 7 $\$20 - \3.50
- 8 $\$1.70 - 15c$
- 9 $2000 - 250$
- 10 $600 \text{ mL} - 350 \text{ mL}$

Revision

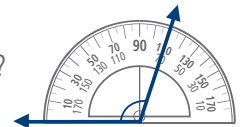
11 Write the inverse of $\square \times 30 = 210$, then solve.

12 Write the inverse of $\square \div 50 = 8$, then solve.

13 What is the change from \$20 if an item costs \$18.50?

14 What is the size of this angle?

- 70° 110° 180°



15 How many 50c coins make \$8?

16 Write the probability of choosing a green ball from this bag as a fraction.



17 Write the probability of choosing a pink ball from the bag as a simplified fraction.

18 Which shape shows a flip to the right?



19 Which shape shows a slide to the right?



20 Which shape shows a quarter-turn anticlockwise?



Q1-10: /10

11-20: /10

My time:

Q1-10: /10

11-20: /10

My time:

Day 3

- 1 12×35
- 2 $\$1.50 \times 6$
- 3 55×16
- 4 $8 \times \$3.50$
- 5 5.5×14
- 6 $18 \times \$5.50$
- 7 35×140
- 8 $\$1.50 \times 16$
- 9 3.5×120
- 10 45×18

Revision

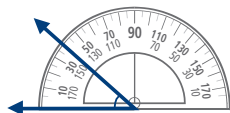
11 Write the inverse of $\square \times 9 = 360$, then solve.

12 Write the inverse of $\square \div 70 = 70$, then solve.

13 Amelia paid $\$3.50$ for her fruit salad. How much change from $\$10$ should she get?

14 What is the size of this angle?

- 40° 90° 140°



15 How many 20c coins make $\$9$?

16 Write the probability of not choosing a green ball from this bag as a fraction.



17 What is the change from $\$50$ for two footy tickets that cost $\$21.50$ each?

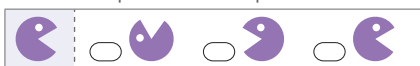
18 Which shape shows a flip to the right?



19 Which shape shows a slide to the right?



20 Which shape shows a quarter-turn anticlockwise?



Day 4

- 1 50% of 52 weeks
- 2 50% of 10 000
- 3 25% of 60 min
- 4 10% of 700
- 5 10% of 15 kg
- 6 50% of 1 day
- 7 50% of 150 m
- 8 25% of 48
- 9 10% of 5000
- 10 10% of $\$10$

Revision

11 Which shape shows a flip to the right?



12 Which shape shows a slide to the right?



13 Which shape shows a quarter-turn clockwise?



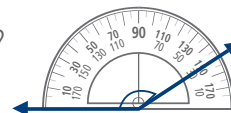
14 How many 50c coins make $\$15$?

15 Write the inverse of $\square \div 90 = 90$, then solve.

16 Write the inverse of $\square \div 0.5 = 0.5$, then solve.

17 What is the size of this angle?

- 30° 150° 180°



18 Write the probability of rolling a 6-sided dice for a 5 as a fraction.



19 Write the probability of rolling the same dice for an even number as a simplified fraction.

20 Ivy has one of every Australian coin except one. Her total is $\$3.75$. Which coin doesn't Ivy have?

Day 5

- 1 $850 + 70$
- 2 $0.55 + 0.06$
- 3 $3 - 0.65$
- 4 $\$20 - \5.50
- 5 15×140
- 6 $\$1.50 \times 12$
- 7 3.5×16
- 8 10% of 300
- 9 25% of 28 days
- 10 50% of 160 km

11 Aydan bought his lunch for \$11.90. How much change from \$20 should he get?

12 Write the probability of choosing a yellow ball from this bag as a simplified fraction.



13 Write the probability of winning a raffle in which 1000 tickets were sold and you bought 3 tickets.

14 Which shape shows a flip to the right?



15 Which shape shows a slide to the right?



16 Which shape shows a quarter turn anticlockwise?



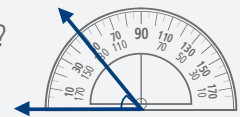
17 Write the inverse of $\square \div 40 = 8$, then solve.

18 Write the inverse of $\square \times 7 = 350$, then solve.

19 How many 20c coins make \$3?

20 What is the size of this angle?

- 50° 130° 180°



Assessment

Q1–10: /10

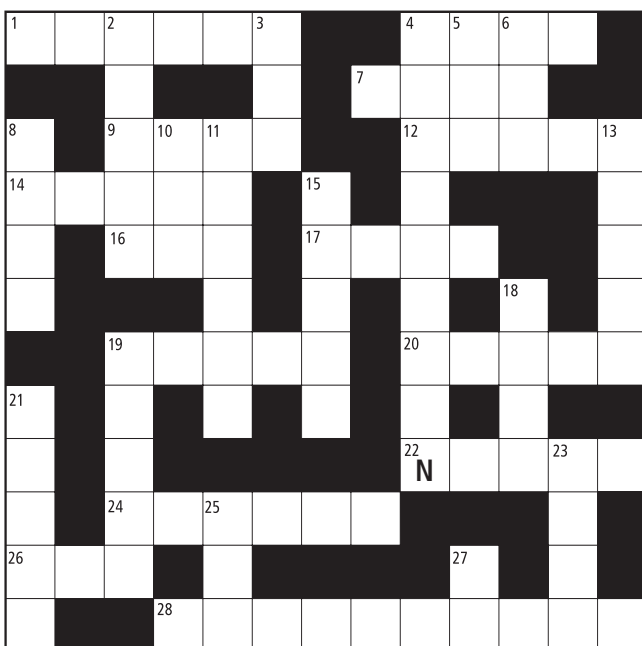
Q11–20: /10

My time:

Think Box

Calculator Flipword

Use the maths clues to help you complete this crossword. Solve each clue with your calculator, then flip the calculator to read the word.



Across

- 1 $267\,754 + 267\,754 =$ people in charge
- 4 $10\,000 - 4486 =$ snake sound
- 7 $926 \times 4 =$ an opening
- 9 $5700 - 37 =$ laid by hens
- 12 $27\,689 \times 2 =$ God you
- 14 $0.07 + 0.0061 =$ Inuit ice home
- 16 $4249 \div 7 =$ tree trunk
- 17 $154 \times 20 =$ musical instrument
- 19 $69\,411 - 11\,695 =$ used by fish to breathe
- 20 $70\,014 \div 2 =$ not tight
- 22 $50 \times 70 =$ hangman's rope
- 24 $810 + 7008 + 530\,000 =$ Christian books
- 26 $3487 \div 11 =$ tell untruths
- 28 $5\,461\,375\,808 =$ toboggans

Down

- 2 $232\,035 \div 3 =$ oyster case
- 3 $101 \times 5 =$ distress signal
- 4 $8\,903\,402 \times 2 =$ underground fantasy creature
- 5 $1000 - 229 =$ sick
- 6 $19 + 78 + 65 + 173 =$ look
- 8 $385\,700 \div 50 =$ small mountain
- 10 $0.051 + 0.009 =$ sticky stuff
- 11 $188\,303 \times 2 =$ eye protector
- 13 $6427 \times 5 =$ take by force
- 15 $600 \times 50 + 5006 =$ lays the golden egg
- 18 $14.568 \div 24 =$ symbol
- 19 $50\,000 - 11\,924 =$ sphere
- 21 $14\,277 \times 4 =$ heats to 100°C
- 23 $610 + 4005 =$ heavy breath
- 25 $0.04 + 0.04 =$ scare
- 27 $2 + 10 + 2 =$ hello