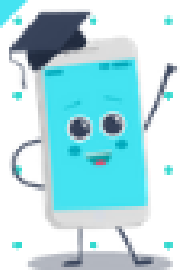




I WAS GOOD
AT MATHS
BEFORE THE
ALPHABET
GOT
INVOLVED!

ALGEBRA FOR KIDS!





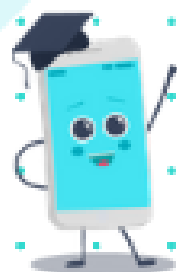
ALGEBRA IS SIMPLY
REPLACING A NUMBER
WITH A SYMBOL.

In school, we often see algebraic problems using letters such as x or y but the concept is the same: a value usually represented by a number is replaced by something other than a number.

Using pictures is a great way to build a child's familiarity with algebraic thinking without feeling intimidated. Maths should be fun and engaging!

The skills involved in solving these puzzles involve the algebraic skills needed by the end of Key Stage 2 but you are never too young (or old!) to start.

Follow us on Instagram for tips and modelled solutions to algebraic puzzles and many more!



Q 1

$$\text{Avocado} + \text{Croissant} + \text{Squid} = 38$$

$$\text{Avocado} + \text{Squid} + \text{Avocado} = 41$$

$$\text{Croissant} + \text{Croissant} + \text{Croissant} = 27$$

Q 2

$$3 \text{ Mice} + 2 \text{ Lion Dances} = 73$$

$$1 \text{ Mouse} + 2 \text{ Lion Dances} = 23$$



Q 3

$$\text{Whale} + \text{Whale} + \text{Leopard} = 23$$

$$\text{Monkey} + \text{Monkey} + \text{Leopard} = 25$$

$$\text{Leopard} + \text{Leopard} + \text{Whale} = 25$$

Q 4

$$\text{Kiwi} + \text{Pancake} = 7$$

$$\text{Kiwi} \times \text{Pancake} = 12$$

$$\text{Kiwi} > \text{Pancake}$$



Q 5

$$\begin{array}{|c|c|c|c|} \hline \triangle & \bigcirc & \triangle & \bigcirc \\ \hline \end{array} = 40$$

$$\begin{array}{|c|} \hline \triangle \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline \bigcirc \\ \hline \end{array}$$

$$= 33$$

$$\triangle = ?$$

$$\bigcirc = ?$$

Q 6

$$\text{Monkey} \div \text{Lion} = 20$$

if $\text{Monkey} = 100$ $\text{Lion} = ?$

if $\text{Lion} = 6$ $\text{Monkey} = ?$



Q 7

List all the possibilities

$$\text{Kangaroo} + \text{Owl} + \text{Hedgehog} = 20$$

$$\text{Kangaroo} > 11$$

$$\text{Owl} < 4$$

$$\text{Hedgehog} > 4$$

Q 8

$$\text{Crocodile} - \text{Elephant} = 32$$

$$\text{if } \text{Crocodile} = 45 \quad \text{Elephant} = ?$$

$$\text{if } \text{Elephant} = 20 \quad \text{Crocodile} = ?$$

Q 9

$$\begin{array}{c} \text{Monkey} \quad \text{Monkey} \quad + \quad \text{Lion} \end{array} = 35$$

if $\text{Monkey} = 10$ $\text{Lion} = ?$

if $\text{Lion} = 10$ $\text{Monkey} = ?$

Q 10

List all the possibilities

$$\begin{array}{c} \text{Kangaroo} \quad + \quad \text{Owl} \quad - \quad \text{Hedgehog} \end{array} = 18$$

$$\text{Kangaroo} > 17$$

$$\text{Owl} < 3$$

$$\text{Hedgehog} < 4$$



Q 11

$$\text{Crocodile} + \text{Crocodile} - \text{Elephant} = 18$$

if $\text{Crocodile} = 30$ $\text{Elephant} = ?$

if $\text{Elephant} = 12$ $\text{Crocodile} = ?$

Q 12

$$\begin{array}{|c|c|c|c|c|} \hline \triangle & \bigcirc & \triangle & \bigcirc & \star \\ \hline \end{array} = 39$$

$$\begin{array}{|c|} \hline \bigcirc \\ \hline \triangle \\ \hline \triangle & \star \\ \hline \end{array} = 19$$

$$\triangle + \bigcirc = 30$$

$$\triangle = ?$$

$$\bigcirc = ?$$

$$\star = ?$$



Q 13

★	●	▲	★	●	= 42
	▲				
	★				
★	★				

= 22

= 34

▲ **= ?**

● **= ?**

★ **= ?**

Q 14

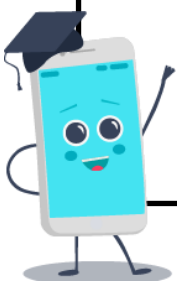
List all the possibilities

×
+
= 20

> 2

< 8

< 6



Q 15

$$\text{Monkey} - \text{Lion} - \text{Lion} = 17$$

if $\text{Monkey} = 35$ $\text{Lion} = ?$

if $\text{Lion} = 35$ $\text{Monkey} = ?$

Q 16

$$\begin{array}{|c|c|c|c|} \hline \triangle & \triangle & \bigcirc & \bigcirc \\ \hline \end{array} = 16$$

$$\begin{array}{|c|} \hline \bigcirc \\ \hline \bigcirc \\ \hline \end{array} = 11$$

$$\triangle = ?$$

$$\bigcirc = ?$$



Q 17

$$\begin{array}{|c|c|c|c|c|} \hline \star & \triangle & \triangle & \star & \bigcirc \\ \hline \end{array} = 23$$

$$\begin{array}{|c|} \hline \triangle \\ \hline \triangle \\ \hline \star & \star \\ \hline \end{array} = 10$$

$$= 14$$

$$\triangle = ?$$

$$\bigcirc = ?$$

$$\star = ?$$

Q 18

$$\text{crocodile} \div \text{elephant} = 18$$

$$\text{if } \text{crocodile} = 27 \quad \text{elephant} = ?$$

$$\text{if } \text{elephant} = 5 \quad \text{crocodile} = ?$$



Q 19

List all the possibilities

$$\text{Kangaroo} \times \text{Owl} + \text{Hedgehog} = 30$$

$$\text{Kangaroo} > 2$$

$$\text{Owl} > 4$$

$$\text{Hedgehog} < 6$$

Q 20

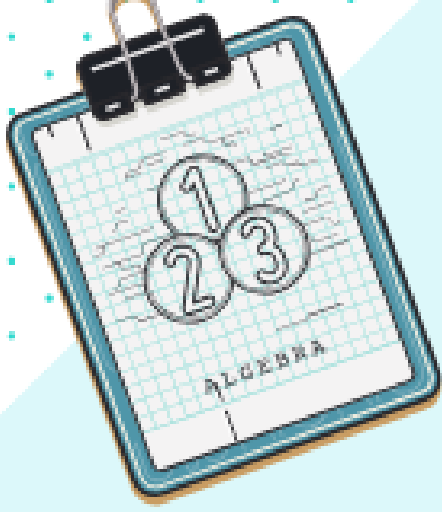
$$\begin{array}{|c|c|c|c|} \hline \triangle & \bigcirc & \bigcirc & \bigcirc \\ \hline \end{array} = 35$$

$$\begin{array}{|c|} \hline \triangle \\ \hline \end{array} = 35$$

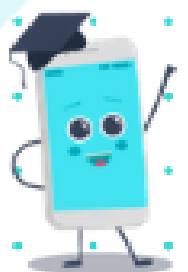
$$\triangle = ?$$

$$\bigcirc = ?$$





ANSWERS



Q 1



= 12

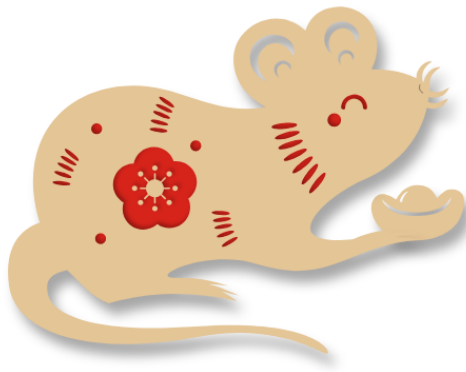


= 9



= 17

Q 2



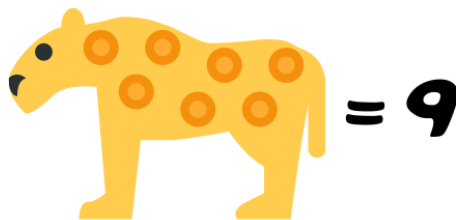
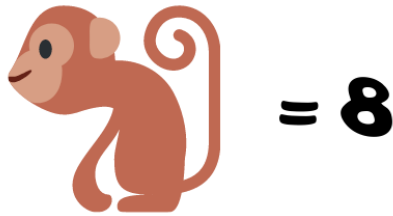
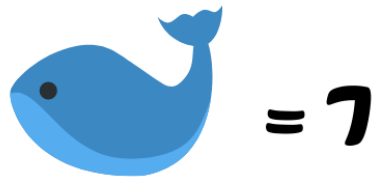
= 11



= 6



Q 3



Q 4



Q 5

$$\begin{array}{|c|c|c|c|} \hline \triangle & \bigcirc & \triangle & \bigcirc \\ \hline \triangle & & & \\ \hline \bigcirc & & & \\ \hline \end{array} = 40$$

$$\begin{array}{|c|} \hline \triangle \\ \hline \bigcirc \\ \hline \end{array} = 33$$

$$\triangle = 13$$

$$\bigcirc = 7$$

Q 6

$$\text{Monkey} \div \text{Lion} = 20$$

$$\text{Monkey} = 100 \quad \text{Lion} = 5$$

$$\text{Lion} = 6 \quad \text{Monkey} = 120$$



Q 7

ALGEBRA

$$\text{Kangaroo} + \text{Owl} + \text{Hedgehog} = 20$$

> 11

12

12

12

13

13

14

< 4

3

2

1

2

1

1

> 4

5

6

7

5

6

5

Q 8

$$\text{Crocodile} - \text{Elephant} = 32$$

$$\text{Crocodile} = 45 \quad \text{Elephant} = 13$$

$$\text{Elephant} = 20 \quad \text{Crocodile} = 52$$



Q 9

$$\text{Monkey} + \text{Monkey} + \text{Lion} = 35$$

$$\text{Monkey} = 10 \quad \text{Lion} = 15$$

$$\text{Lion} = 10 \quad \text{Monkey} = 12.5$$

Q 10

List all the possibilities

$$\text{Kangaroo} + \text{Owl} - \text{Hedgehog} = 18$$

$$\text{Kangaroo} > 17$$

$$\text{Owl} < 3$$

$$\text{Hedgehog} < 4$$



Q 11

$$\begin{array}{c} \text{crocodile} \end{array} \begin{array}{c} \text{crocodile} \end{array} - \begin{array}{c} \text{elephant} \end{array} = 18$$

$$\begin{array}{c} \text{crocodile} \end{array} = 30 \quad \begin{array}{c} \text{elephant} \end{array} = 42$$

$$\begin{array}{c} \text{elephant} \end{array} = 12 \quad \begin{array}{c} \text{crocodile} \end{array} = 15$$

Q 12

$$\begin{array}{|c|c|c|c|c|} \hline \triangle & \bigcirc & \triangle & \bigcirc & \star \\ \hline & \bigcirc & & & \\ \hline & \triangle & & & \\ \hline & \triangle & \star & & \\ \hline \end{array} = 39$$

$$\begin{array}{|c|c|} \hline \triangle & \star \\ \hline \end{array} = 19$$

$$\begin{array}{|c|} \hline \triangle \\ \hline \end{array} = 30$$

$$\triangle = 10$$

$$\bigcirc = 5$$

$$\star = 9$$



Q 13

$$\begin{array}{|c|c|c|c|c|} \hline \star & \bullet & \blacktriangle & \star & \bullet \\ \hline & \blacktriangle & & & \\ & \star & & & \\ & \star & \star & & \\ \hline \end{array} = 42$$

$$\begin{array}{|c|c|} \hline \star & \star \\ \hline \end{array} = 22$$

$$\begin{array}{|c|} \hline \star \\ \hline \end{array} = 34$$

$$\blacktriangle = 4$$

$$\bullet = 8$$

$$\star = 11$$

Q 14

$$\begin{array}{c} \text{Kangaroo} \\ > 2 \end{array} \times \begin{array}{c} \text{Owl} \\ < 8 \end{array} + \begin{array}{c} \text{Hedgehog} \\ < 6 \end{array} = 20$$

3

6

2

3

5

5

4

4

4

5

3

5

6

3

2



Q 15

$$\text{Monkey} - \text{Lion} - \text{Lion} = 17$$

$$\text{Monkey} = 35$$

$$\text{Lion} = 9$$

$$\text{Lion} = 35$$

$$\text{Monkey} = 87$$

Q 16

$$\begin{array}{|c|c|c|c|} \hline \triangle & \triangle & \bigcirc & \bigcirc \\ \hline \end{array} = 16$$

$$\begin{array}{|c|} \hline \bigcirc \\ \hline \bigcirc \\ \hline \end{array}$$

$$= 11$$

$$\triangle = 5$$

$$\bigcirc = 3$$



Q 17

$$\begin{array}{|c|c|c|c|c|} \hline \star & \triangle & \triangle & \star & \bigcirc \\ \hline \triangle & & & & \\ \triangle & & & & \\ \star & \star & & & \\ \hline \end{array} = 23$$

$$\begin{array}{|c|c|} \hline \star & \star \\ \hline \end{array} = 10$$

$$\begin{array}{|c|} \hline \triangle \\ \triangle \\ \star & \star \\ \hline \end{array} = 14$$

$$\triangle = 3$$

$$\bigcirc = 7$$

$$\star = 5$$

Q 18




$$2 \text{ crocodiles} \div 1 \text{ elephant} = 18$$

$$1 \text{ crocodile} = 27 \quad 1 \text{ elephant} = 3$$

$$1 \text{ elephant} = 5 \quad 1 \text{ crocodile} = 45$$



Q 19


 \times

 $+$

 $= 30$

> 2

> 4

< 6

3

9

3

4

7





2

5

5

5

Q 20





 $= 35$




$= 35$



$= 14$



$= 7$

