1

[2016]

Each shape stands for a number.
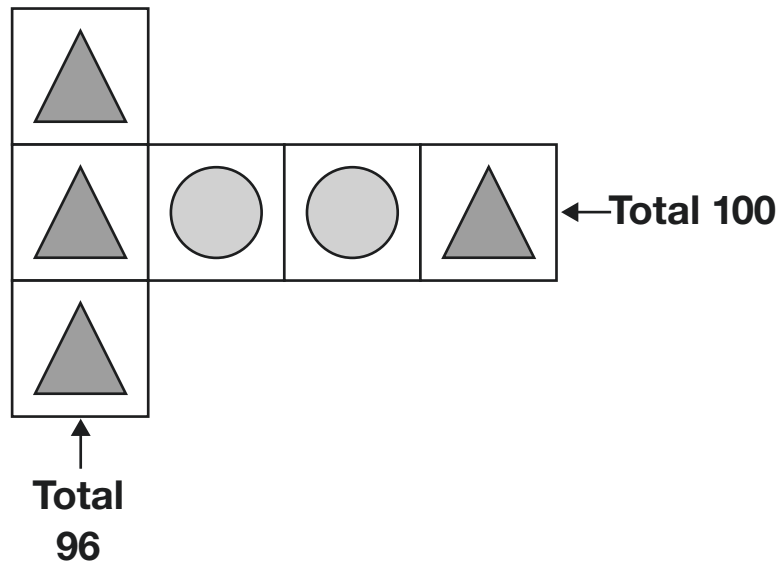
Work out the value of each shape.

 = _____

 = _____

[2 marks]

2

[2014]

n stands for a whole number.

2n is greater than 30
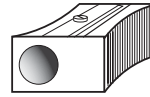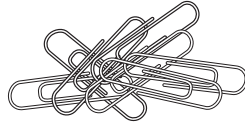**5n** is less than 100

Write all the numbers that *n* stands for.

_____

[1 mark]

3

One battery weighs the same as **60** paperclips.

One pencil sharpener weighs the same as **20** paperclips.

How many pencil sharpeners weigh the same as one battery?

How many paperclips weigh the same as **2** batteries and **4** pencil sharpeners together?

Show your method

[3 marks]

4

k stands for a whole number.

$k + 7$ is greater than 100

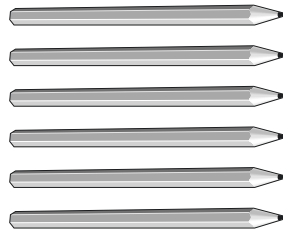$k - 7$ is less than 90
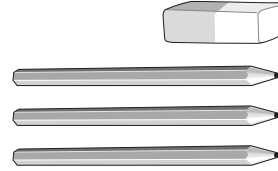
Find **all** the numbers that k could be.
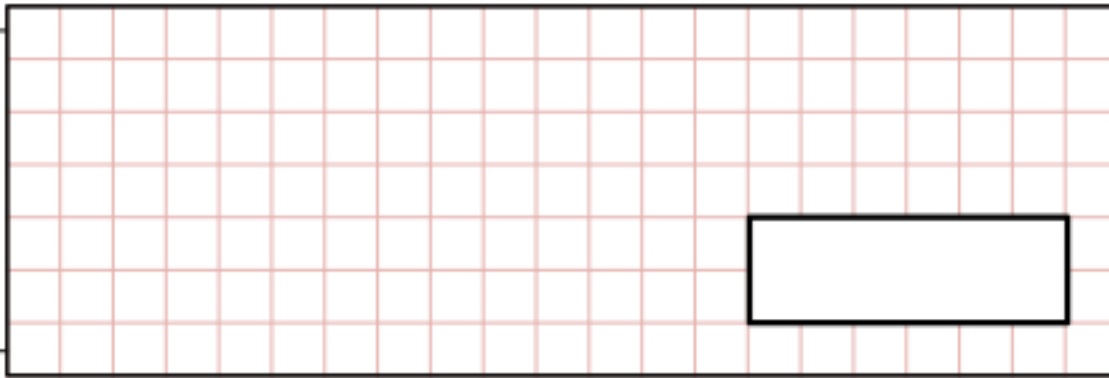
_____

[1 mark]

6 pencils cost **£1.68**

3 pencils and 1 rubber cost **£1.09**

What is the cost of **1 rubber**?

Show your method

[2 marks]

Here is an equation.

$$m - 2n = 10$$

When n = 20 what is the value of m?

$m =$ _____

When m = 20 what is the value of n?

$n =$ _____

[2 marks]

m stands for a whole number greater than 10 and less than 20

n stands for a whole number greater than 2 and less than 10

What is the **smallest** number that *m* × *n* could be?

What is the **largest** number that *m* − *n* could be?

[2 marks]

Leon and Sara each started with **different** numbers.

I **added 5** to my number.

I **subtracted 8** from my number.
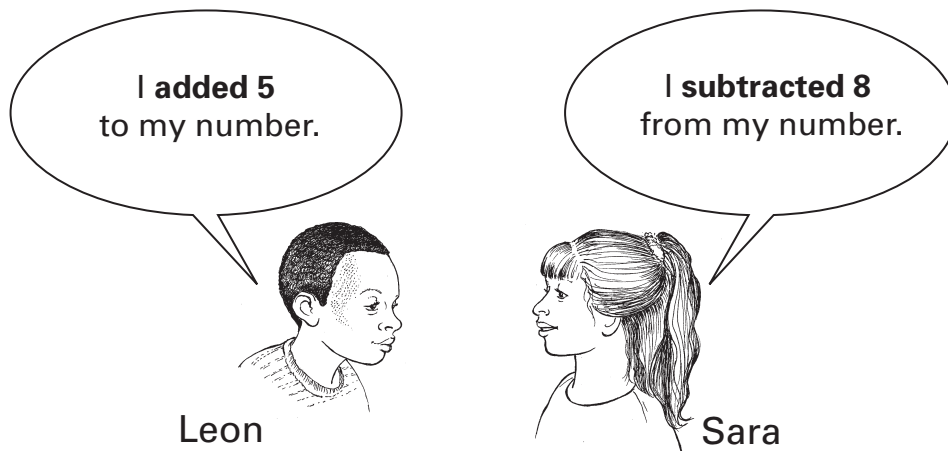
Leon

Sara

Leon and Sara both get the **same** answer.

What numbers could they have started with?

Leon ☐   Sara ☐

[1 mark]

$n = 22$

What is $2n + 9$?

$2q + 4 = 100$

Work out the value of q.

$q =$

[2 marks]

Sapna and Robbie have some biscuits.

Altogether they have **14** biscuits.

Sapna has **2 more** biscuits than Robbie.

How many biscuits do Sapna and Robbie each have?

Sapna   **Robbie**

[2 marks]

11

p and **q** each stand for whole numbers.

$$p + q = 1000$$

p is 150 **greater** than **q**.

Calculate the numbers **p** and **q**.

Show your method

[1 mark]

12

An iced cake costs 10p more than a plain cake.

Sarah bought two of each cake.

They cost £1 altogether.

What is the cost of an **iced** cake?

Show your method

[2 marks]

Emily, Ben and Nisha take part in a sponsored swim to collect money for charity.

Emily collects £2.75 **more** than Nisha.

Ben collects £15

Nisha collects £7 **less** than Ben.

Altogether how much money do the three children collect?

Show your method

[2 marks]

14

g stands for a number on a grey card.

w stands for a number on a white card.

Join all pairs of numbers that match this rule:

$$2g + w = 10$$

One has been done for you.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

[2 marks]

15

Here is an equation.

$$k = 100 - 4n$$

Find the value of *k* when *n* = 60

k = ☐

Find the value of *n* when *k* = 99

n = ☐

[2 marks]

16

Amir has three parcels.

Parcels A and B together weigh the same as parcel C.

The three parcels weigh 800 grams altogether.

Parcel A weighs 250g.

How much does parcel B weigh?

Show your method

[2 marks]

17

Lin has five blocks which are all the same.

She balances them on the scale with two weights.

500 grams

800 grams

Calculate the weight of **one** block.

Show your method

[2 marks]

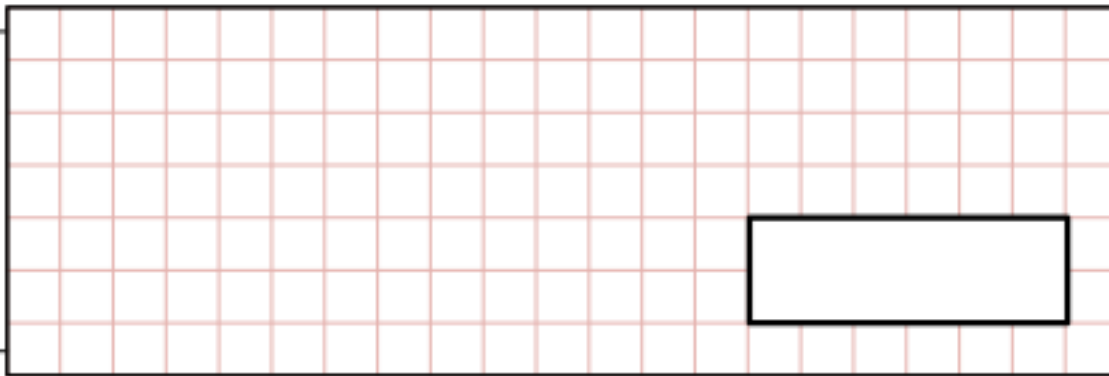**18**

Look at these expressions.

$$5y - 8$$

first
expression

$$3y + 5$$

second
expression

What value of y makes the two expressions equal?

Show your method

[2 marks]

19

A shop sells school uniform.

Two shirts and one jumper cost **£29**

One shirt and one jumper cost **£21**

How much does **one jumper** cost?

£

[2 marks]

20

[2014]

Alfie has two sticks.

He puts them end to end.

Not actual size

◄———————— 80cm ————————►

One stick is **10cm longer** than the other stick.

How long is the longest stick?

cm

[1 mark]

21

[2010]

Sarah, Amy and Liam stand on some weighing scales two at a time.

Here are the measurements:

Sarah and Amy   **70 kg**

Sarah and Liam   **80 kg**

Liam and Amy   **80 kg**

How much does Liam weigh?

Show your method

[2 marks]

22

Hassan bought **a notebook** and **a pen**.
He paid **£1.10**

Kate bought **a notebook** and **2 pens**.
She paid **£1.45**

Calculate the cost of a notebook.

Show your method
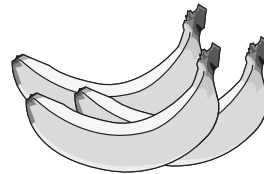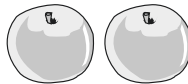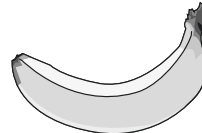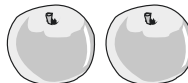
[2 marks]

23

A shop sells fruit.

Chen buys 2 apples and 3 bananas.
He pays £2.35

Megan buys 2 apples and 1 banana.
She pays £1.25

How much does one banana cost?

Show your method

[2 marks]