National Numeracy Tests

# REASONING

# 9ER18

**First name** _____

**Last name** _____

**School** _____

**Class** _____

**Date of birth** ○○ ○○ ○○○○

**Date of test** ○○ ○○ 2018

**Total score** ☐ (maximum 20)

165133

Llywodraeth Cymru
Welsh Government

**1** Complete the table.

| Area of solar panels ($m^2$) | Power generated (megawatts) | Amount of $CO_2$ saved each year (tonnes) |
|---|---|---|
| 2000 | 1 | 430 |
| | 10 | |
| 40 000 | | 8600 |

2m

40 000$m^2$ of solar panels is the same area as

a **square** that is _____ m by _____ m

1m

1 car gives out about 2.7 tonnes of $CO_2$ each year.

8600 tonnes of $CO_2$ is the amount of $CO_2$ that

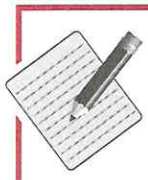
about _____ cars give out in a year.

1m

A solar farm with 40 000m² of solar panels will generate enough power for 6000 homes.

There are about 1.4 million homes in Wales.

How many solar farms of this size would power 5% of the homes in Wales?



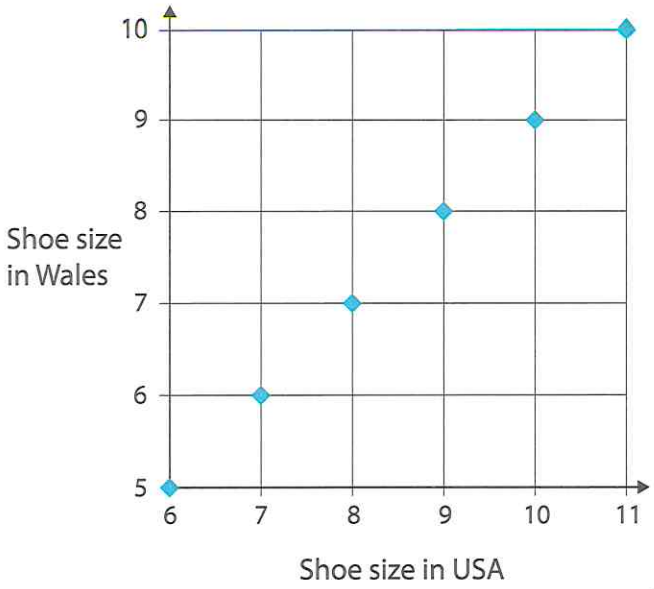
solar farms

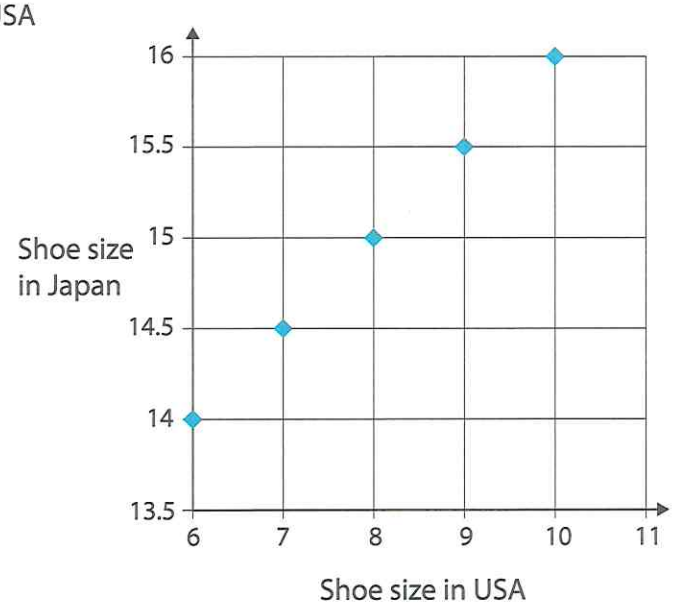
3m

TOTAL

7m

**2** A website compares shoe sizes for young children.



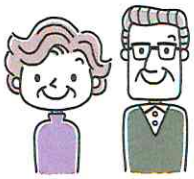




Use the two charts above to complete the one below.

2m

**3** Beti is 2 years **younger** than Ifor.

Beti's and Ifor's ages add up to 140



Beti Ifor

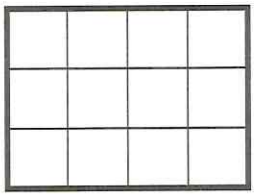
How old are Beti and Ifor?

Beti is

Ifor is

2m

**4** This rectangle contains 12 small squares.



Sam wants to shade $\frac{1}{5}$ of the rectangle.

Why can't he do this by shading whole squares?

1m

What fractions of the rectangle can he make by shading whole squares?

Write all possible fractions with 1 as the numerator.

2m

TOTAL

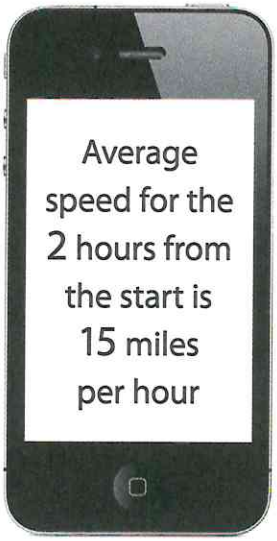
7m

**5** Rachel started her cycle ride at 2pm.

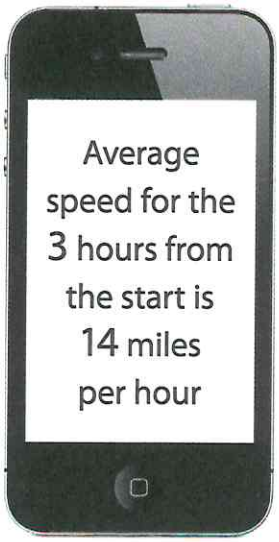
Here is what her phone showed at 3pm, 4pm and 5pm.

At 3pm

At 4pm




At 5pm




Show that Rachel cycled 21 miles between 3pm and 4pm.

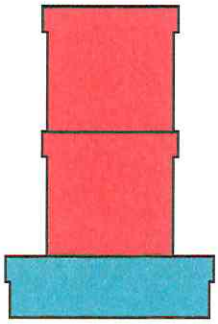
1m

How many miles did Rachel cycle between 4pm and 5pm?

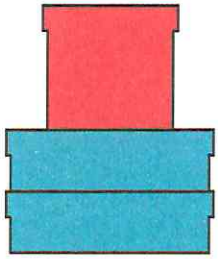
miles

2m

**6** A shop sells soaps in blue and red boxes.

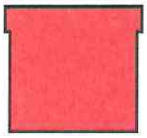


1 blue and 2 red boxes
Total cost £58.25



2 blue and 1 red boxes
Total cost £53.50

Calculate the cost of a blue box and a red box.



£

£

3m

TOTAL

6m

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