

## STARTER QUESTIONS

Welcome!

Here are some warm-up questions to get your brains working. Discuss them with each other and with your teacher.

NO CALCULATORS!

**QUESTION 1**

Which positive integer below 50 has the greatest number of factors?

**QUESTION 6**

2017 is a prime number.

When is the next year that is prime?

**QUESTION 2**

What is the value of the third cube added to the fifth square number?

**QUESTION 7**

Write down seven integers that have a mean of 7, a median of 7, and a mode of 7, but which are not all 7.

**QUESTION 3**

What are the similarities between a trapezium and a parallelogram?

What are the differences?

**QUESTION 8**

I catch the bus at 8:42 and the journey to town takes 45 minutes.

What time will I get there?

**QUESTION 4**

Last year the price of a cinema ticket went up 25% from £4 to £5.

What percentage reduction would take the new price back to the old price?

**QUESTION 9**

I cycle at a speed of 15 km per hour for 40 minutes.

How far do I travel?

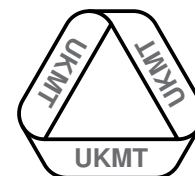
**QUESTION 5**

Which is larger  $\frac{5}{6}$  or  $\frac{6}{7}$ ?

**QUESTION 10**

Choose a mathematical word; describe it to a friend without saying the word itself.

Can they work out what you're describing?



STARTER QUESTIONS

ANSWERS

**QUESTION 1**

48 has ten factors: 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48.

**QUESTION 5**

$\frac{5}{6} = \frac{35}{42}$  and  $\frac{6}{7} = \frac{36}{42}$ , therefore  $\frac{6}{7}$  is larger.

**QUESTION 2**

$$3^3 = 3 \times 3 \times 3 = 27;$$
$$5^2 = 5 \times 5 = 25;$$
$$27 + 25 = 52.$$

**QUESTION 6**

2027 is the next one, and 2029 the one after that.

**QUESTION 7**

There are numerous answers, such as 5, 7, 7, 7, 7, 7, 9 or 4, 4, 7, 7, 7, 10, 10.

**QUESTION 3**

Both are quadrilaterals and have at least one pair of parallel sides. A parallelogram has two pairs of parallel sides of equal length; the trapezium need not have any pairs of sides of equal length.

**QUESTION 8**

9:27. There are 18 minutes until 9:00 and then another 27 minutes until the journey is over.

**QUESTION 4**

$5.00 \times \frac{80}{100} = 4.00$ , so a 20% reduction is needed.

**QUESTION 9**

10 km. Every 20 minutes I cycle 5 km.

**QUESTION 10**

This is the Maths version of the well-known game *Taboo*.