St Faith's
CAMBRIDGE

Sample Mathematics Paper

for entry into

Year 8

Entry assessment for pupils planning to join St Faiths in Year 8 (Mathematics)

All pupils planning to enter the school in year 8 next September will be assessed on work covering the following topics.

The work will be set at levels 4, 5 and 6 of the National Curriculum.

The Number System and Place Value.

Number Relationships

Calculations

Solving Numerical Problems

Algebraic manipulation

Equations and Formulae

Functions and Graphs

Shape

Symmetry and transformation

Movement

Position and coordinates

Measures

Representing and processing Data

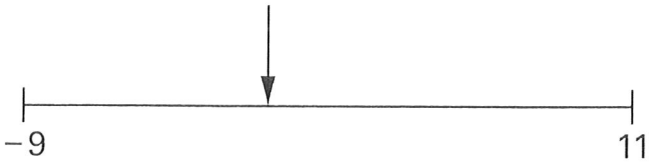
Interpreting Data

The questions will be a mixture of calculations and word problems, followed by a short investigation, and credit will be given for clearly shown accurate working. For part of the assessment a calculator will be provided.

Sample Questions

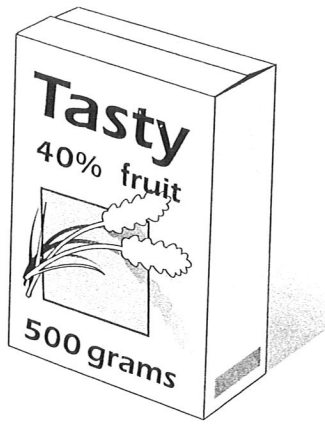
1 A number line starts at **–9** and finishes at **11**

What number is $\frac{2}{5}$ of the way along the number line?



2 A packet of Tasty contains fruit and cereal.

Altogether, the mass of fruit and cereal is **500 g**.
40% of it is **fruit**. **60%** is **cereal**.

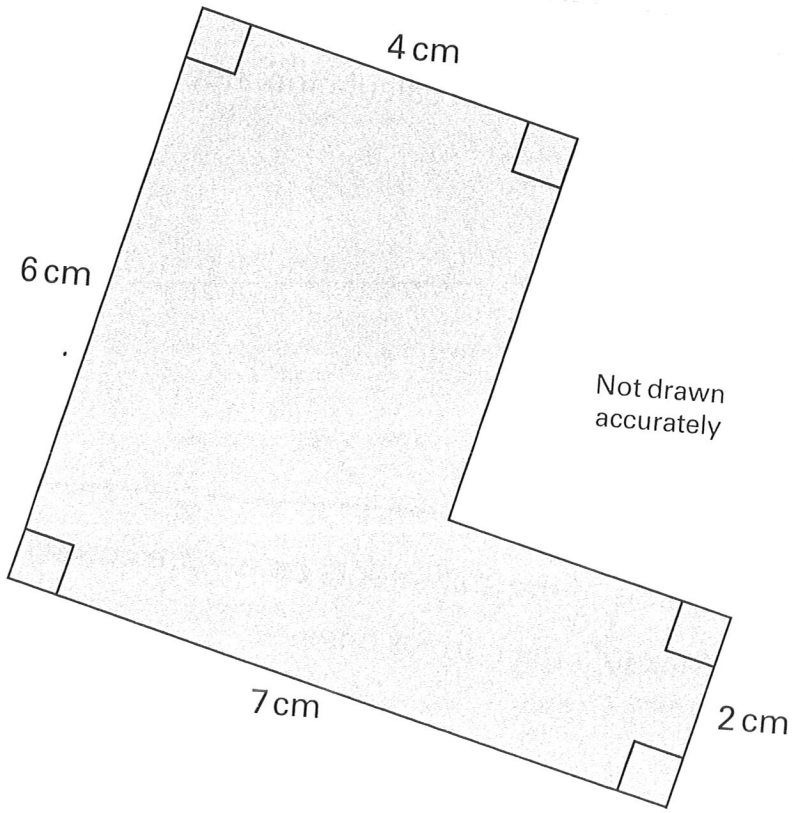


(a) How many grams of **fruit** does this packet of Tasty contain?

(b) How many **60 gram** servings can you get from one packet of Tasty?

(c) The **ratio** of fruit to cereal in a packet of Tasty is **40 : 60**
Write this ratio in its simplest form.

3 What is the area of this L-shape?



4 The **mean** of these three numbers is **6**

10	1	7

Write three numbers that have a mean of **7**

5 A table shows how much time it takes to fly between some cities.

	Chicago	London	Moscow	Paris
London	8 hours 18 minutes			
Moscow	12 hours 9 minutes	3 hours 27 minutes		
Paris	9 hours	1 hour 3 minutes	4 hours	
Tokyo	12 hours 33 minutes	11 hours 50 minutes	9 hours 15 minutes	10 hours 3 minutes

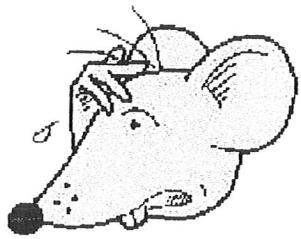
Example: It takes **1 hour 3 minutes** to fly from **Paris** to **London**.

(a) How much time does it take to fly from **Tokyo** to **Moscow**?

(b) Martin's flight leaves **London** at **07:00**

What time will it be in London when Martin is due to land in **Chicago**?

19 miles Investigation



All three of us have got to go on a 19 mile cross country relay. We each have to run part of the relay - but the number of miles we each run has to be an odd number.

Can you help them out?

There are 3 runners.

Each runner has to run an odd number of miles.

They have to run a total of 19 miles.

How many different ways can they do this?

· Well, I could run 17 miles and they could run 1 mile each!