

# GCSE Mathematics — Foundation Tier

Mixed practice paper · Calculator allowed

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Total: **32 marks**

## Instructions

- Answer all questions in the spaces provided.
- Show all working. Marks may be awarded for method.
- Diagrams are not drawn to scale.
- Calculators may be used unless a question says otherwise.

### 1 Percentage increase & decrease

2 marks

A town has a population of 3300. The population falls by 12%. Work out the new population.

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### 2 Comparing fractions

2 marks

Which is larger,  $\frac{3}{5}$  or  $\frac{6}{9}$ ? You must show your working.

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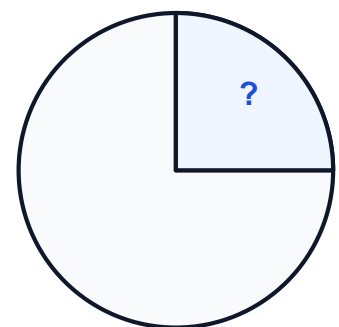
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### 3 Pie charts

2 marks

The pie chart shows the pets owned by 8 students. 2 of them own a cat. Work out the angle of the cat sector.



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**4** Powers & roots

1 mark

Work out  $15^2$ .

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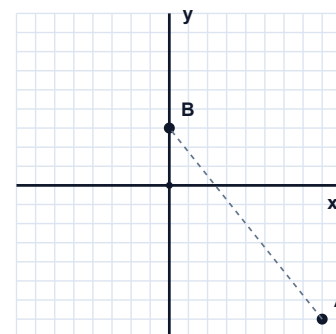
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**5** Midpoints

2 marks

A is the point  $(8, -7)$  and B is the point  $(0, 3)$ . Work out the coordinates of the midpoint of AB.



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**6** Ratio (given one part)

3 marks

Girls and boys are in the ratio  $5 : 8$ . There are 40 girls. Work out the total number of pupils.

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**7** Sequences (nth term)

2 marks

Here are the first five terms of a sequence:

**4, 9, 14, 19, 24**

- (a) Find an expression for the  $n$ th term.  
(b) Hence find the 30th term.

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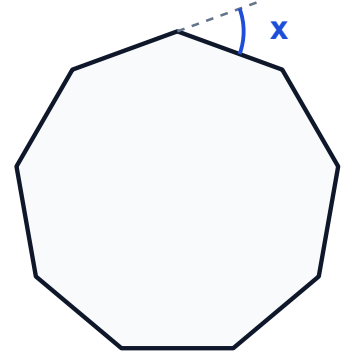
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## 8 Angles in polygons

2 marks

Work out the sum of the interior angles of a polygon with 9 sides.



## 9 Two-way tables

2 marks

The incomplete two-way table shows how some students travel to school.

|       | Walk | Car | Total |
|-------|------|-----|-------|
| Boys  | 12   | 12  | 24    |
| Girls | 8    | ?   | 11    |
| Total | 20   | 15  | 35    |

Work out the number of girls who travel by car.

## 10 Simplifying fractions

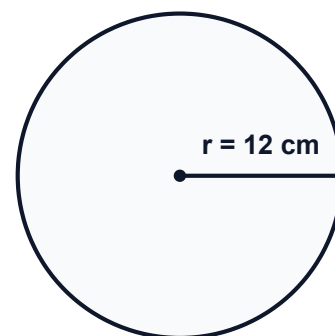
2 marks

Write  $12/18$  in its simplest form.

**11** Circumference & area

3 marks

A circle has a radius of 12 cm. Work out its area. Give your answer to 1 decimal place.



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**12** Solving equations

2 marks

Solve  $6x - 4 = 26$ .

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**13** Substituting into a formula

2 marks

The cost  $C$ , in pounds, of hiring a van is  $C = 30 + 0.3m$ , where  $m$  is the number of miles driven. Work out  $C$  when  $m = 60$ .

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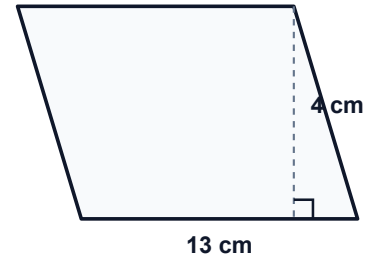
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**14** Perimeter & area

2 marks

A parallelogram has a base of 13 cm and a perpendicular height of 4 cm. Work out its area.



**15** Matchstick patterns

3 marks

A pattern of squares is made from matchsticks. Figure 1 uses 4 matchsticks, Figure 2 uses 7 and Figure 3 uses 10.

- (a) How many matchsticks are used in Figure 7?
- (b) Write an expression, in terms of  $n$ , for the number of matchsticks in Figure  $n$ .

