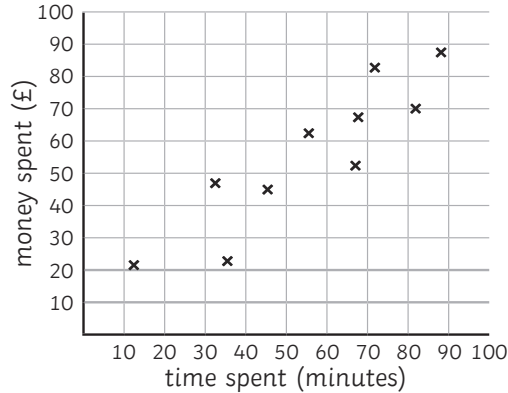**1** The scatter graph shows the amount of time that 10 shoppers spent in the supermarket one morning against the amount of money they spent.
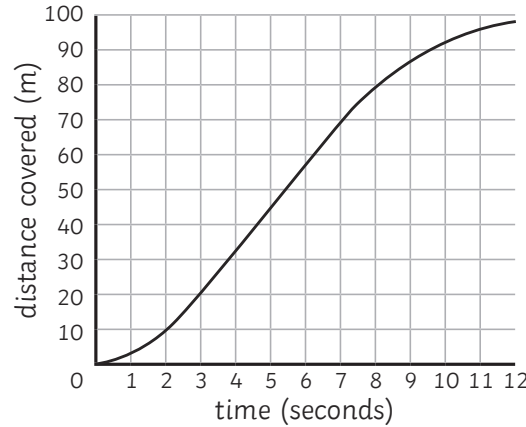

a) What is the relationship between time spent and money spent in the supermarket?

b) One customer spends 40 minutes in the supermarket. Estimate how much money he or she will have spent.

c) How reliable is your estimate? Can you explain why?

2 The graph shows the distance covered by a runner against time during a 100m sprint.

a) Find an estimate of the gradient when t = 5 seconds.

b) What information does the gradient give you about the runner at that time?

3 Give the equation of the line which is perpendicular to the line with equation $y = 4x + 5$ and which passes through the point (1, 6)

4 The bearing of the cafe from the school in Bearsville is 048°. **What is the bearing of the school from the cafe?**

5 In Year 11 at Green Field School, $\frac{3}{8}$ of the students play football in PE lessons, the rest go swimming. 25% of the footballers and $\frac{13}{20}$ of the swimmers are female.

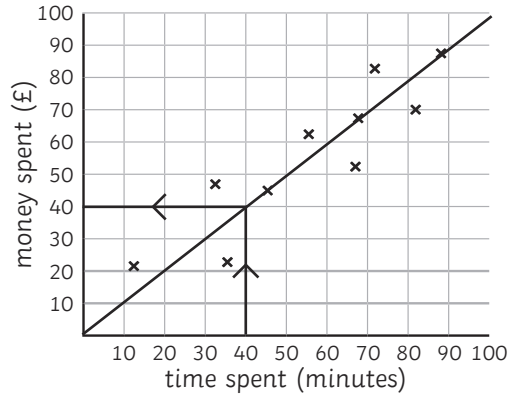a) What fraction of the year group is female?

b) What is the lowest number of pupils there could be in the year group?

6 $a = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$, $b = \begin{pmatrix} 2 \\ -7 \end{pmatrix}$

Give $a - 2b$ as a single vector.

1

The scatter graph shows the amount of time that 10 shoppers spent in the supermarket one morning against the amount of money they spent.

a) What is the relationship between time spent and money spent in the supermarket?

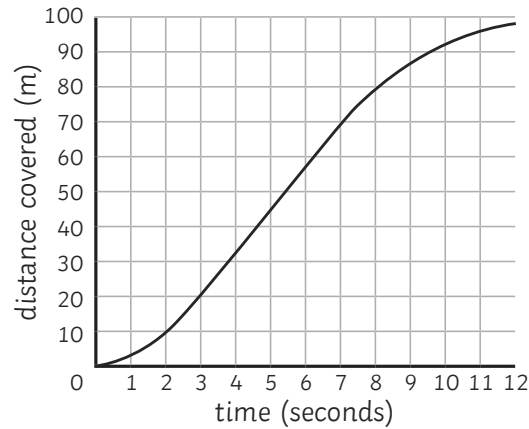**Generally, the more time that shoppers spend in the store, the more they spend.**

b) One customer spends 40 minutes in the supermarket. Estimate how much money he or she will have spent.

Appropriate reading taken from line of best fit.

c) How reliable is your estimate? Can you explain why?

The estimate is within the range of the data and the graph shows a fairly good correlation, so the estimate is reliable.

2

The graph shows the distance covered by a runner against time during a 100m sprint.

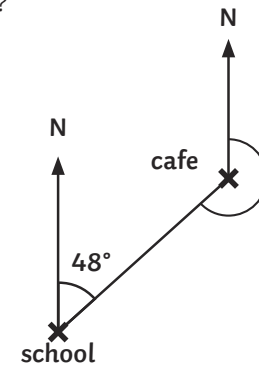a) Find an estimate of the gradient when t = 5 seconds.

Approx 12.5

b) What information does the gradient give you about the runner at that time?

The runner's speed in m/s.

3

Give the equation of the line which is perpendicular to the line with equation $y = 4x + 5$ and which passes through the point (1, 6)

$$y = -\frac{1}{4}x + 6\frac{1}{4} \text{ or equivalent}$$

4

The bearing of the cafe from the school in Bearsville is 048°. What is the bearing of the school from the cafe?

228°

5

In Year 11 at Green Field School, $\frac{3}{8}$ of the students play football in PE lessons, the rest go swimming. 25% of the footballers and $\frac{13}{20}$ of the swimmers are female.

a) What fraction of the year group is female? $\frac{1}{2}$

b) What is the lowest number of pupils there could be in the year group?   **32**

6

$a = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$, $b = \begin{pmatrix} 2 \\ -7 \end{pmatrix}$

Give $a - 2b$ as a single vector. $\begin{pmatrix} -1 \\ 18 \end{pmatrix}$