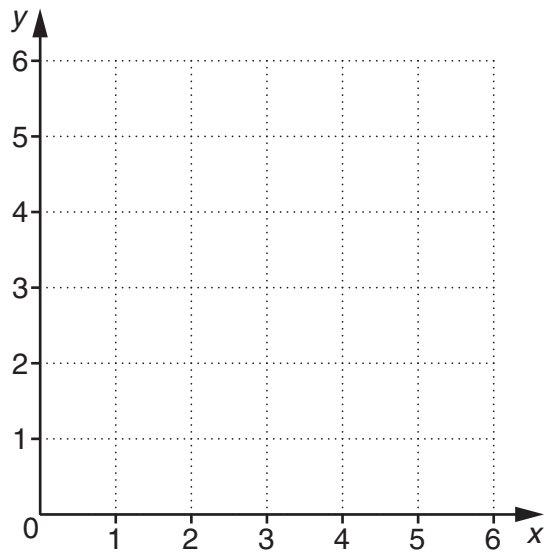
**1** **(a)** Complete the table for $2x + 3y = 12$.

| $x$ | 0 | 4.5 | |
|---|---|---|---|
| $y$ | | | 0 |

**[2]**

**(b)** Draw the graph of $2x + 3y = 12$ for $0 \leqslant x \leqslant 6$.




**[2]**

**(c)** Use your graph to find the gradient of the line $2x + 3y = 12$.

**(c)** _____ **[2]**

**2** **(a** Find the value of $6x^2$ when $x = -4$.

**(a)** _____ **[2]**

**(b)** Find the first 3 terms of the sequence whose $n$th term is $4n + 3$.

**(b)** _____ _____ _____**[2]**

**(c)** Factorise completely.

$6y^2 + 9y$

**(c)** _____ **[2]**

**(d)** Solve.

$2x + 7 = 6x - 8$

**(d)** _____ **[3]**

**(e)** Rearrange this formula to make $x$ the subject.

$y = 4x + 6$

**(e)** _____ **[2]**

**3** **(a)** When $a = -5$, $b = -2$ and $c = 6$, find the value of

**(i)** $a^2$,

**(a)(i)** ..... **[1]**

**(ii)** $1000b$,

**(ii)** ..... **[1]**

**(iii)** $\frac{a+c}{b}$.

**(iii)** ..... **[1]**

**(b)** Solve these equations.

**(i)** $2(3x - 1) = 10x - 5$

**(b)(i)** ..... **[4]**

**(ii)** $x^2 - 4 = 60$

**(ii)** ..... **[3]**

**4** **(a** Write a **number** in each box so that the following is an identity.

$$5x - 7(2x - 3) \equiv 6x + 3 - \square\, x + \square$$

**[2]**

**(b)** Solve this equation.

$$\frac{5x + 4}{2} = x - 1$$

**(b)** _____ **[3]**

**(c)** Solve this equation.

$x^2 = 81$

**(c)** _____ **[2]**

**(d)** Rearrange this formula to make $p$ the subject.

$H = \sqrt{10p + c}$

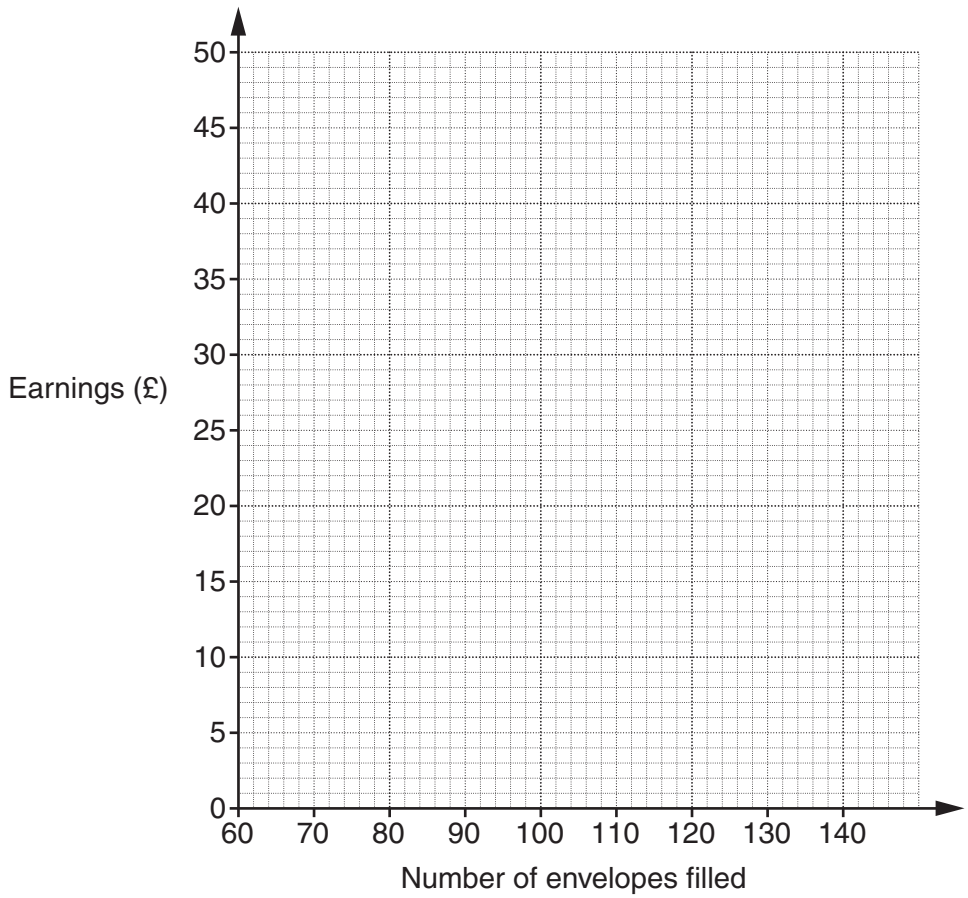
**(d)** _____ **[3]**

**6** **(a)** Lizzie has a part-time job putting leaflets into envelopes.
She earns £30 a day for filling **up to** 90 envelopes.
She earns 20p for every **extra** envelope she fills after 90.

**(i)** Complete this table showing how much she can earn.

| Number of envelopes filled | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 |
|---|---|---|---|---|---|---|---|---|---|
| Earnings (£) | | 30 | | 30 | | | | 38 | |

**[2]**




**(ii)** Plot the pairs of values on the grid and join them using straight lines. **[2]**

**(b)** Alec also has a job filling envelopes.
He earns 30p for **every** envelope he fills.

**(i)** On the grid draw the straight line graph to show Alec's earnings for filling from 60 to 140 envelopes.
Label this line A. **[2]**

**(ii)** One day Alec and Lizzie find they have both earned the same amount of money and filled the same number of envelopes.

How many envelopes did they each fill?

**(b)(ii)** _____ **[1]**