| **Section A** | **Linear Simultaneous Equations** | **Grade B / A** |

1. Solve the simultaneous equations

$$5x + 6y = 28$$
$$x + 3y = 2$$

You **must** show your working. Do **not** use trial and improvement.

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Answer $x =$ ……………………, $y =$ ………………………

(Total 3 marks)

2. Solve the simultaneous equations $\quad 4x + 3y = 14 \quad\quad 2x + y = 5$

You **must** show your working. Do **not** use trial and improvement.

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Answer $x =$ .... , $y =$ ....

(Total 3 marks)

3. Solve the simultaneous equations $4x + 3y = 5$
$2x - 5y = 9$

You **must** show your working. Do **not** use trial and improvement.

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Answer $x = $ .... , $y = $ ....

(Total 4 marks)

4. Solve these simultaneous equations $3x + 5y = 4$
$6x + y = 26$

You **must** show your working. Do **not** use trial and improvement.

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Answer $x = $ .... $y = $ ....

(Total 3 marks)

5. Solve these simultaneous equations

$$x + 3.6y = 2$$
$$x - 2.4y = 5$$

You **must** show all your working. Do **not** use trial and improvement.

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Answer $x = $ ……………………………. $y = $ ……………………………..

(Total 3 marks)

6. Solve the simultaneous equations:

$$2x + 3y = 9$$
$$3x + 2y = 1$$

You **must** show all your working. Do **not** use trial and improvement.

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Answer $x = $ ...., $y = $ ....

(Total 4 marks)

7. Solve the simultaneous equations

$$5x + 3y = 13$$
$$3x + 5y = 3$$

You **must** show your working. Do **not** use trial and improvement.

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Answer $x = $ .... , $y = $ ....

(Total 4 marks)

8. Solve these simultaneous equations

$$5x + 3y = 6$$
$$3x - 7y = 19$$

You **must** show your working. Do **not** use trial and improvement.

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Answer $x = $ .... , $y = $ ....

(Total 4 marks)

9. The graph of $4y + 3x = 12$ has been drawn on the grid below.

Draw another line on the grid to solve the simultaneous equations
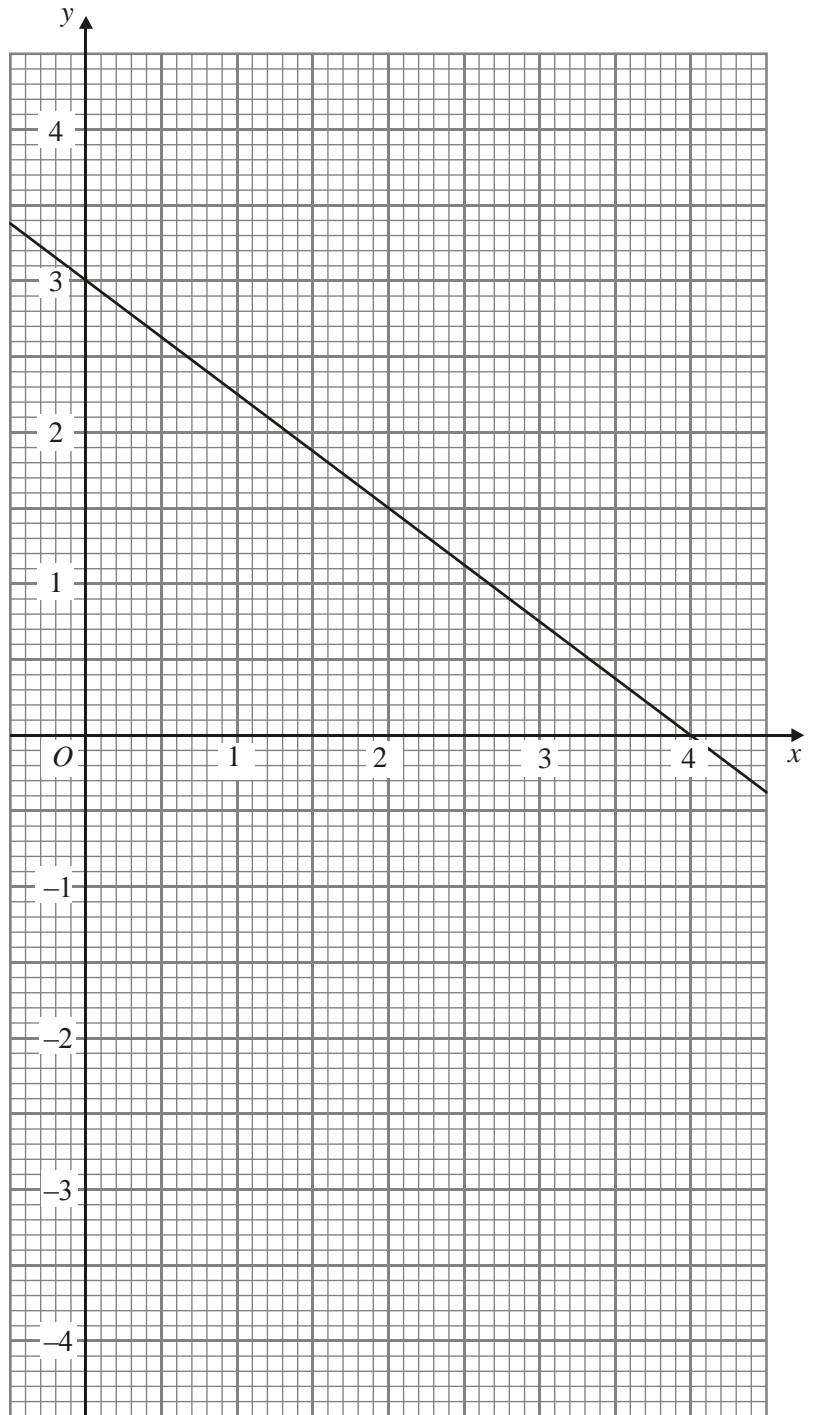
$$4y + 3x = 12$$

$$y = 2x - 4$$

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Answer $x =$ ....,

$y =$ ………………

(Total 3 marks)

Success:	Target:

Section B   One Linear One Quadratic Sim Eqⁿs   Grade A*

1. Solve the simultaneous equations

$$y = x + 2$$

$$y = 3x^2$$

You **must** show your working. Do **not** use trial and improvement.

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Answer ....

(Total 5 marks)

2. Solve the simultaneous equations

$$y = 3x^2$$

$$5x + y = 2$$

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Answer $x =$... $y =$..

(Total 5 marks)

3. Solve the simultaneous equations. $y = x + 7$

$$x^2 + y^2 = 25$$

YOU **must** show your working. Do **not** use trial and improvement.

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Answer ....

(Total 7 marks)

4. Solve the simultaneous equations $y = 2x - 5$
$$x^2 + y^2 = 25$$

You **must** show your working. Do **not** use trial and improvement.

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Answer ....

(Total 6 marks)

5. A straight line has the equation $\qquad y = 2x - 3$

A curve has the equation $\qquad y^2 = 8x - 16$

(a) Solve these simultaneous equations to find any points of intersection of the line and the curve.
Do **not** use trial and improvement. You **must** show all your working.

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Answer ....

(5)

(b) Here are three sketches showing the curve $y^2 = 8x - 16$ and three possible positions of the line $y = 2x - 3$

Sketch 1 $\qquad\qquad\qquad$ Sketch 2 $\qquad\qquad\qquad$ Sketch 3
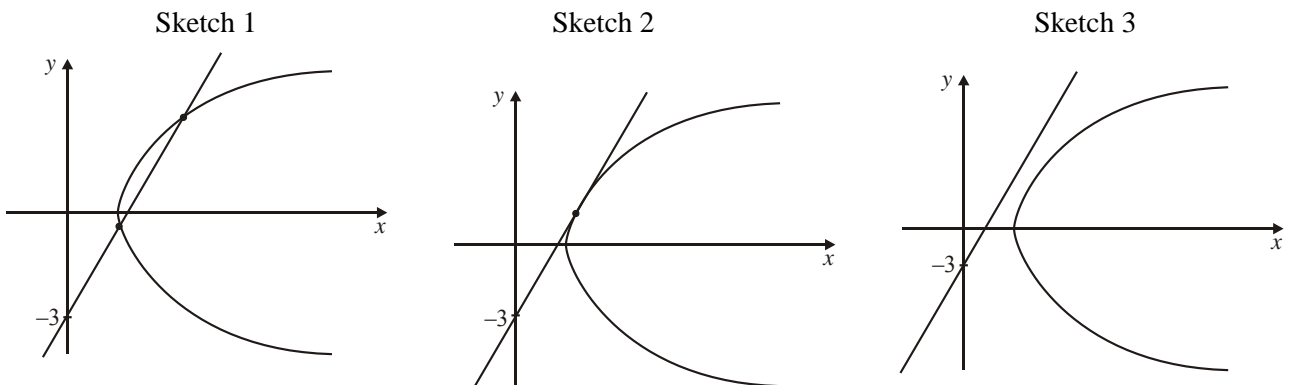
Which is the correct sketch? You **must** explain your answer.

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(2)
(Total 7 marks)

6. The circle $x^2 + y^2 = 29$ and the line $y = x + 3$ intersect at the points A and B.
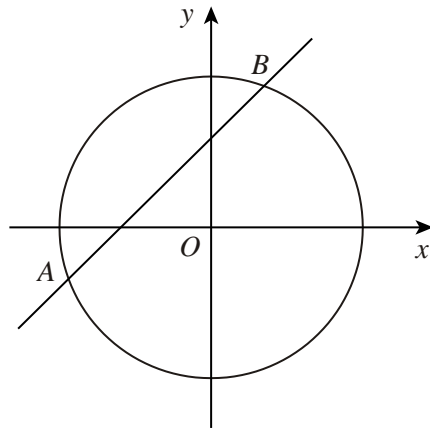
Not drawn accurately

(a) Show algebraically that the *x*-coordinates of the points *A* and *B* are the solutions of the equation

$$x^2 + 3x - 10 = 0$$

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(b) Hence, or otherwise, find the coordinates of *A* and *B*.

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Answers *A* (..............., ...) *B* (...............,...............)

(2)
(Total 5 marks)

7. The diagram shows the graph of the equation $y = x^2 + px + q$

The graph crosses the x-axis at A and B (2,0).

C (−3, −5) also lies on the graph.

Not drawn accurately
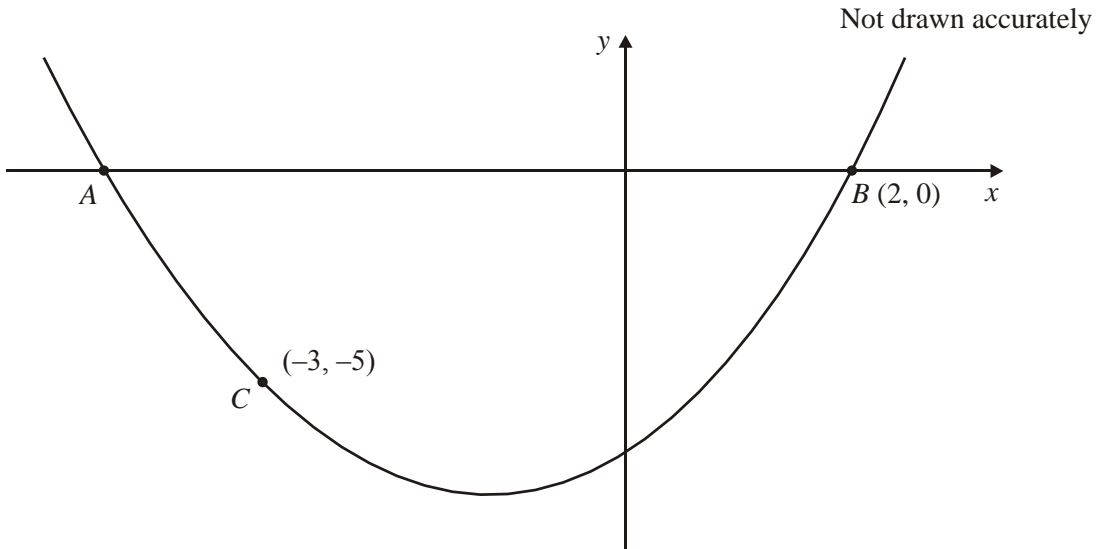
(a) Find the values of p and q.

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Answer p = ………………….. q = ………………….

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(b) Hence work out the coordinates of A.

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Answer (…………………, …………………….)

(2)
(Total 6 marks)

8. The diagram shows a graph of the form $y = x^2 + qx + r$
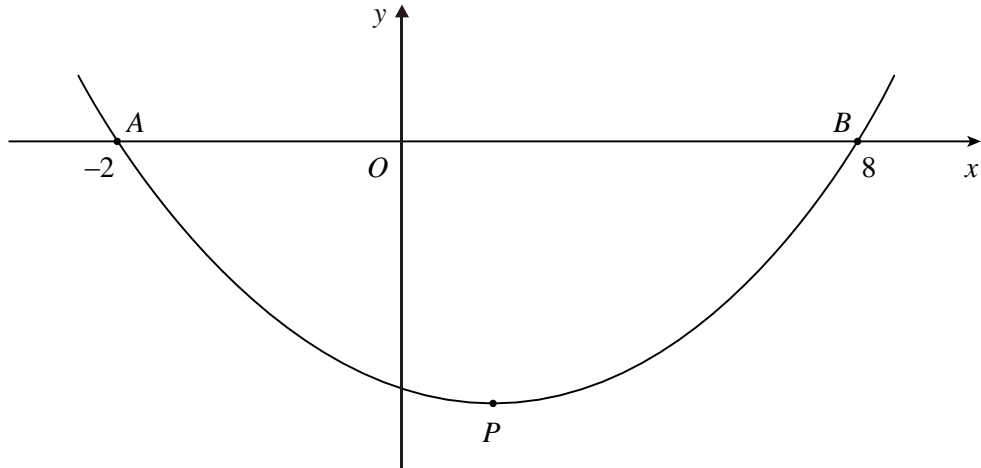
(a) The graph crosses the x-axis at A $(-2, 0)$ and B $(8, 0)$
Show that this is the graph of $y = x^2 - 6x - 16$

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(b) Point P is the lowest point of the graph. What are the coordinates of P?

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Answer $x =$ .... , $y =$ ....

(2)

(c) Solve the equation $(x + 3)^2 - 6(x + 3) - 16 = 0$

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Answer ....

(3)(Total 7 marks)

Success:	Target: