



# EXAM PAPERS PRACTICE

GCSE AQA Math 8300

Equations & Problem  
Solving

Question Paper

*"We will help you to  
achieve A Star "*

**Question 1**

Solve  $3x^2 + 2x - 7 = 0$

Give your solutions correct to 3 significant figures.

Show your working clearly.

[3 marks]

**Question 2**

Solve  $5x^2 + 2x - 4 = 0$

Give your solutions correct to 3 significant figures.

Show your working clearly.

[3 marks]

**Question 3**

Solve  $3x^2 + 6x - 2 = 0$

Give your solutions correct to 2 decimal places.

[3 marks]

**Question 4**

Solve the equation  $3x^2 + 4x - 12 = 0$

Give your solutions correct to 2 decimal places.

[3 marks]

**Question 5**

Solve  $3x^2 - 4x - 2 = 0$

Give your solutions correct to 3 significant figures.

[3 marks]

**Question 6**

The expression  $x^2 - 8x + 21$  can be written in the form  $(x - a)^2 + b$  for all values of  $x$ .

(a) Find the value of  $a$  and the value of  $b$ .

[3 marks]

**Question 7**

Solve  $(x - 2)^2 = 3$

Give your solutions correct to 3 significant figures.

[2 marks]

**Question 8**

Write  $x^2 + 2x - 8$  in the form  $(x + m)^2 + n$   
where  $m$  and  $n$  are integers.

[2 marks]

**Question 9**

(b) Write down the minimum point on the graph of  $y = x^2 + 8x - 9$ .

[1 mark]

**Question 10**

Solve  $x^2 - 6x - 8 = 0$

Write your answer in the form  $a \pm \sqrt{b}$  where  $a$  and  $b$  are integers.

[3 marks]

**Question 11**

Solve the simultaneous equations

$$\begin{aligned} 5y - 4x &= 8 \\ y + x &= 7 \end{aligned}$$

Show clear algebraic working.

[3 marks]

**Question 12**

Solve the simultaneous equations

$$2x - y = 13$$

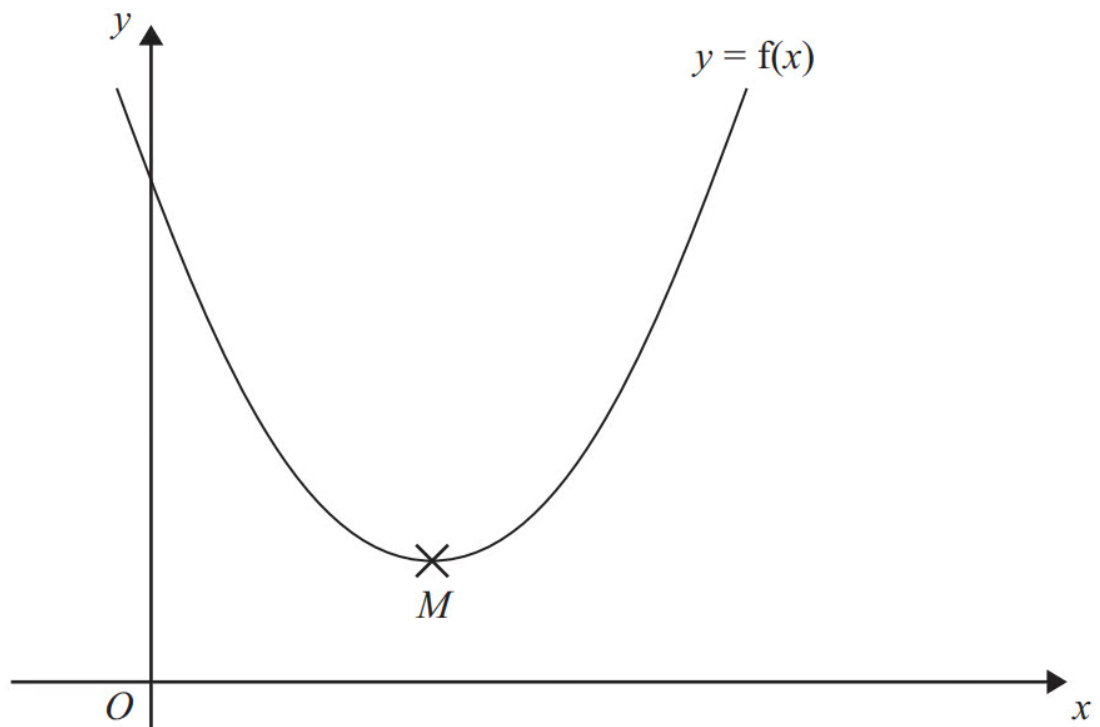
$$x - 2y = 11$$

[3 marks]

**Question 13**

The equation of a curve is  $y = f(x)$  where  $f(x) = x^2 - 8x + 21$

The diagram shows part of a sketch of the graph of  $y = f(x)$ .



The minimum point of the curve is  $M$ .

(b) Write down the coordinates of  $M$ .

[1 mark]

**Question 14**

Solve the simultaneous equations

$$4x + y = 25$$

$$x - 3y = 16$$

[3 marks]

**Question 15**

Solve the simultaneous equations

$$3x + y = -4$$

$$3x - 4y = 6$$

[3 marks]