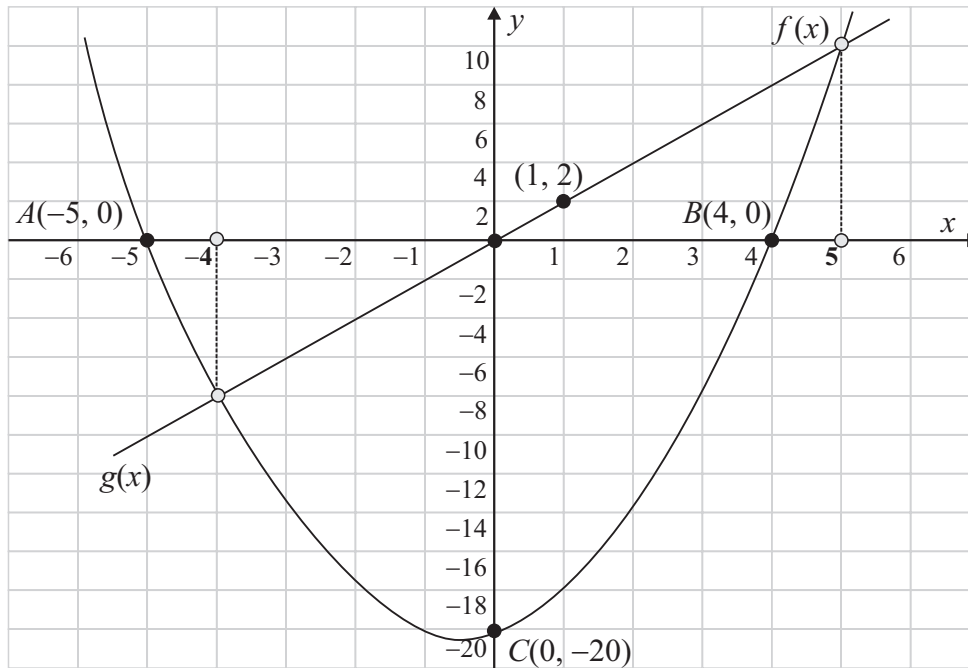


SAMPLE PAPER 6: PAPER 1

QUESTION 1 (25 MARKS)

Question 1 (a)



$$f(x) = 0 \Rightarrow x^2 + x - 20 = 0$$

$$(x - 4)(x + 5) = 0$$

$$\therefore x = 4, -5$$

$$A(-5, 0), B(4, 0)$$

$$x = 0 \Rightarrow (0)^2 + (0) - 20 = -20$$

$$\therefore C(0, -20)$$

To find out where the curve cuts the x -axis, put $f(x) = 0$.
To find out where the curve cuts the y -axis, put $x = 0$.

Question 1 (b)

$(0, 0)$ and $(1, 2)$ are two points on $g(x)$.

Draw a graph of $g(x)$ through these two points.

This straight line intersects the graph of $f(x)$ at $x = -4$ and $x = 5$.

Question 1 (c)

Points: $(x_1, y_1) = (0, 0)$, $(x_2, y_2) = (1, 2)$

$$m = \frac{2 - 0}{1 - 0} = 2$$

$$y - 0 = 2(x - 0)$$

$$\therefore y = 2x \text{ or } g(x) = 2x$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y - y_1 = m(x - x_1)$$