12.

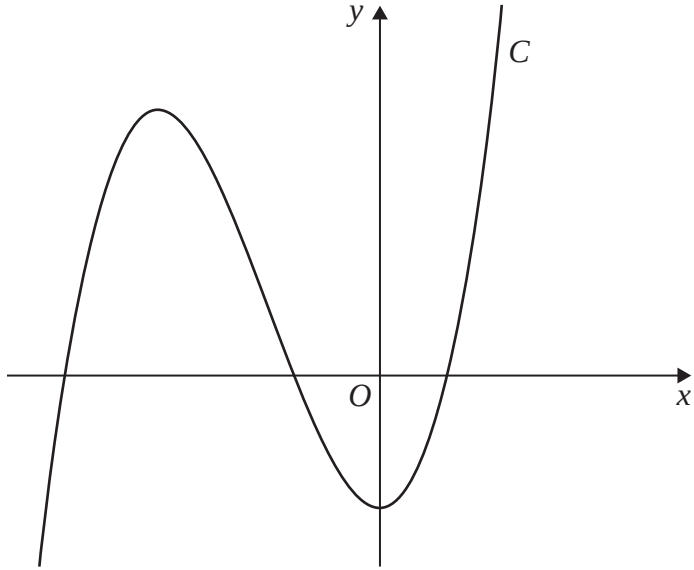


Figure 5

Figure 5 shows a sketch of the curve C.

The curve has a minimum turning point on the y-axis and a maximum turning point in quadrant 2.

(a) On **Diagram 1**, sketch the graph of the gradient function for C.

[A copy of Figure 5 has been included on the next page to help you.]

(3)

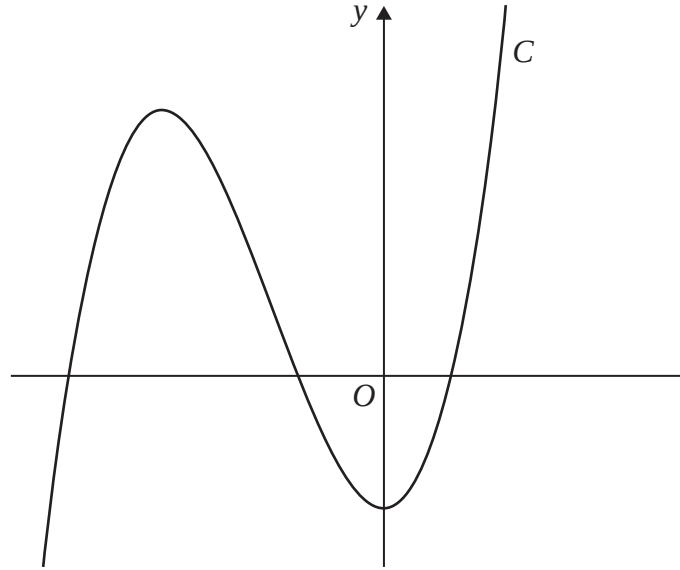
The gradient function for C has **one** of the following equations

$$\frac{dy}{dx} = (x+1)^2 - 2 \qquad \frac{dy}{dx} = 3x^2 + 9x \qquad \frac{dy}{dx} = -x(x+7) \qquad \frac{dy}{dx} = x^2 - 5x$$

(b) State the correct equation for the gradient function, fully justifying your answer.

(2)

Question 12 continued



Copy of Figure 5

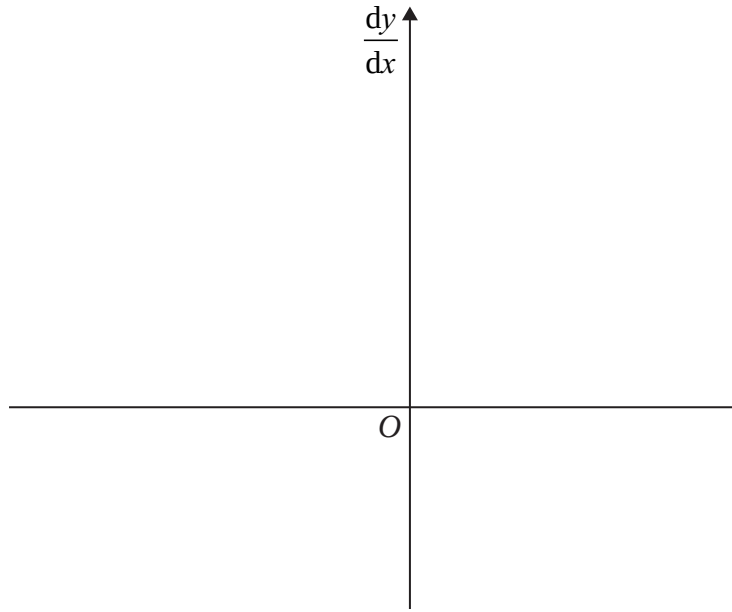


Diagram 1