



2018 P1 Q15

15. A cubic function, f , is defined on the set of real numbers.

- $(x + 4)$ is a factor of $f(x)$
- $x = 2$ is a repeated root of $f(x)$
- $f'(-2) = 0$
- $f'(x) > 0$ where the graph with equation $y = f(x)$ crosses the y -axis

Sketch a possible graph of $y = f(x)$ on the diagram in your answer booklet.

Answer

Question	Generic scheme	Illustrative scheme
15.	<ul style="list-style-type: none">•¹ root at $x = -4$ identifiable from graph•² stationary point touching x-axis when $x = 2$ identifiable from graph•³ stationary point when $x = -2$ identifiable from graph•⁴ identify orientation of the cubic curve and $f'(0) > 0$ identifiable from graph	<ul style="list-style-type: none">•¹•²•³•⁴