

Higher Maths
SQA 2018 Paper 1
Question 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.

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Answer:

The graph should feature:

- a root at $x = -4$
- a stationary point touching the x -axis when $x = 2$
- another stationary point when $x = -2$
- a positive gradient when $x = 0$.

See marking instructions for details.