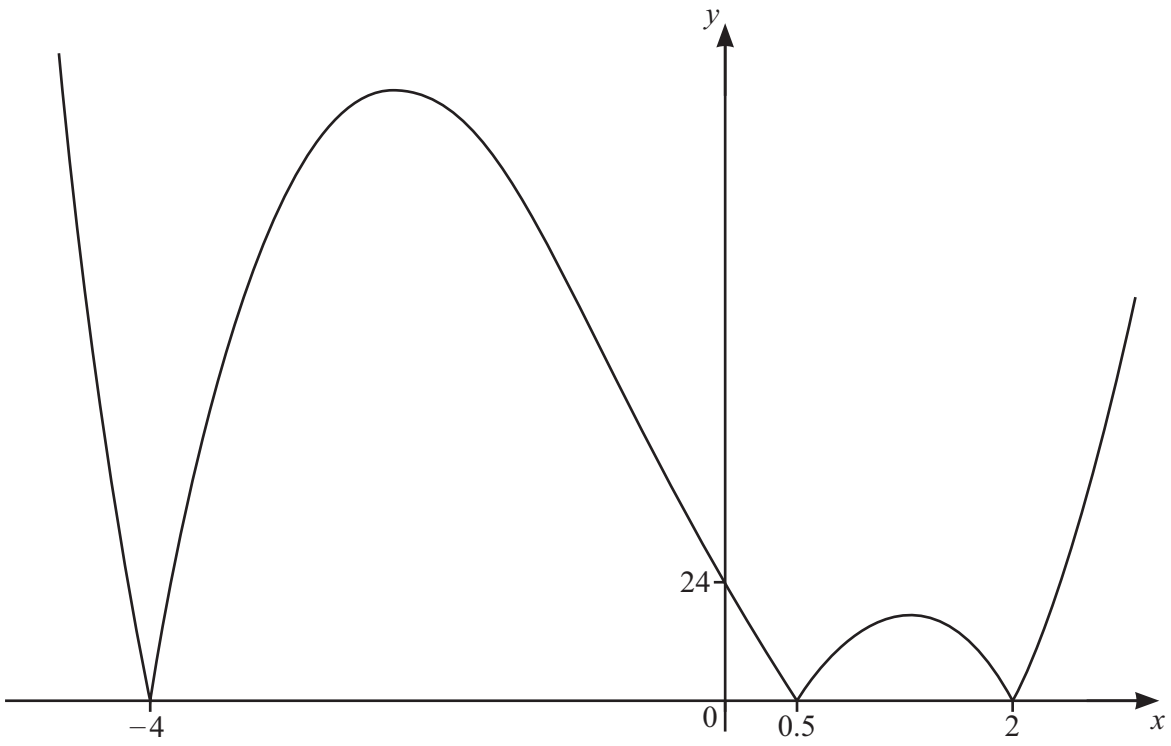
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The diagram shows the graph of $y = |f(x)|$, where $f(x)$ is a cubic polynomial. Find the two possible expressions for $f(x)$ in terms of linear factors with integer coefficients. [3]

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2 **(a)** Given that $256^{x+y} \times 16^{-2x} = 8^{-x+3y}$, show that $y = 3x$. [2]

(b) Hence find the exact solutions of the following simultaneous equations.

$$256^{x+y} \times 16^{-2x} = 8^{-x+3y}$$

$$x^2 + 3y^2 = 56$$

[3]

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