Topic: Quadratic Graphs

ACCESS MATHS

FEEDBACK

ACTION

RESPONSE

Fluency

Draw these quadratic graphs for $-6 \leq x \leq 6$.

a) $y = x^2$
b) $y = x^2 - 16$
c) $y = x^2 + 3x + 2$
d) $y = x^2 - 3x - 4$
e) $y = 5x - x^2$

Make a note of where each graph crosses the x-axes.

Reasoning

1) Draw the graphs $y = -x^2 + 5x - 3$ and $y = x + 2$ on the same axes.

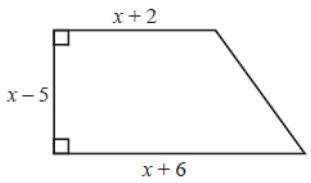
Explain why the quadratic $-x^2 + 5x - 3 = x + 2$ has no solutions.

2) Draw the graphs $y = x^2 - 4x + 3$ and $y = 2x - 6$ on the same axes.

Explain why the quadratic $x^2 - 4x + 3 = 2x - 6$ has only one solution.

Problem Solving

Diagram **NOT** accurately drawn



The diagram shows a trapezium.
The lengths of three of the sides of the trapezium are $x - 5$, $x + 2$ and $x + 6$.
All measurements are given in centimetres.

The area of the trapezium is 36 cm^2.

(a) Show that $x^2 - x - 56 = 0$

(b) Solve the quadratic by plotting the graph. Hence find the shortest side of the trapezium.

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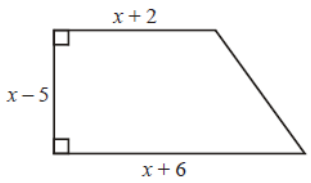

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