

AQA Level 2 Certificate

FURTHER MATHEMATICS

Level 2 (8360)

Worksheet 7

Inequalities

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7 Inequalities

Question 1

$$-6 < 3x \leq 6$$

x is an integer

Write down all the possible values for x .

(2 marks)

Question 2

Solve $6x > 24 - 2x$

(2 marks)

Question 3

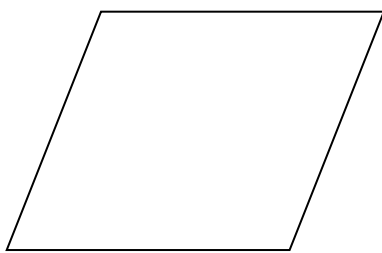
Solve $4(2x - 1) < 2$

(3 marks)

Question 4

A rhombus and a rectangle are shown.

The perimeter of the rhombus is greater than the perimeter of the rectangle.



$$2y + 6$$



$$2y + 10$$

$$y + 4$$

Not drawn accurately

Show that $y > k$ where k is an integer.

(4 marks)

Question 5

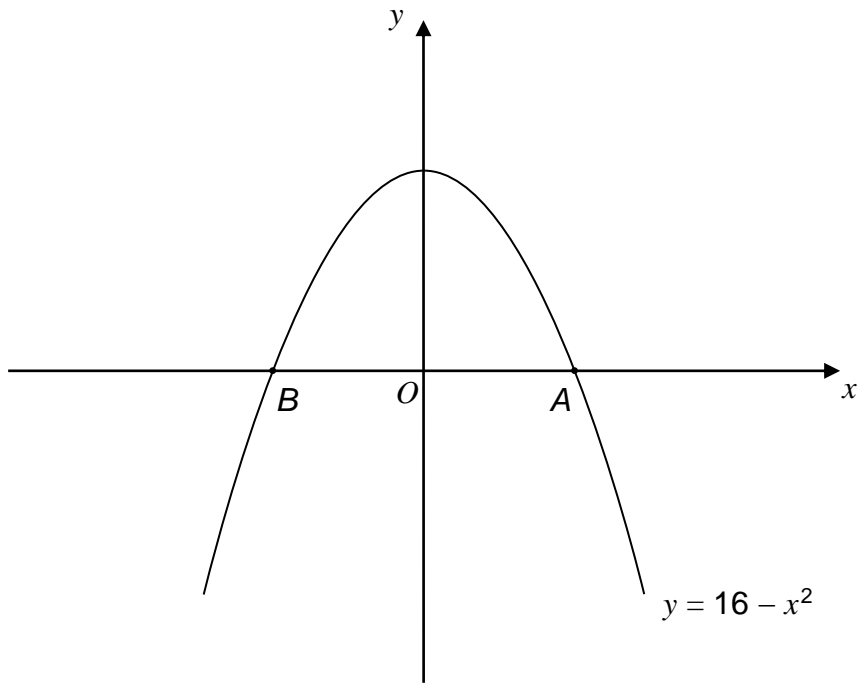
$$p < -1 \text{ and } q > 1$$

Tick the correct box for each statement.

| | Always true | Sometimes true | Never true |
|------------------------|--------------------------|--------------------------|--------------------------|
| $5p < 0$ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| $p^2 < 0$ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| $p + q > 0$ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| $-1 < \frac{q}{p} < 0$ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

(4 marks)

Question 6



- (a) Write down the coordinates of points A and B . (2 marks)
- (b) Hence, or otherwise, solve $16 - x^2 \geq 0$ (2 marks)

Question 7

(a) Factorise $x^2 + 3x$ (1 mark)

(b) Sketch $y = x^2 + 3x$
Label the x values of the points of intersection with the x -axis. (2 marks)

(c) Hence, or otherwise, solve $x^2 + 3x < 0$ (2 marks)

Question 8

Solve $(x - 5)(x + 2) \geq 0$ (3 marks)

Question 9

Solve $x^2 + 4x - 12 < 0$ (4 marks)

Question 10

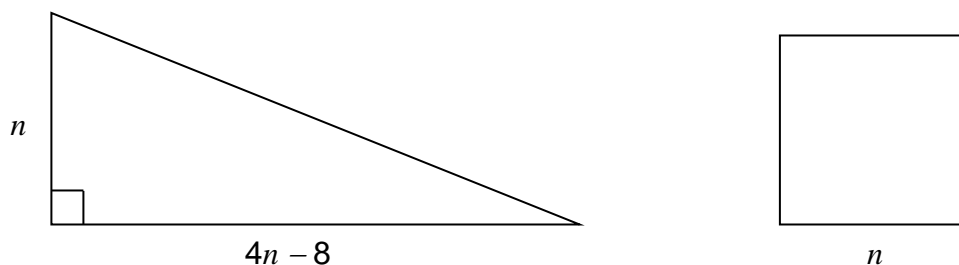
Solve $2x^2 - x - 3 < 0$ (4 marks)

Question 11

Solve $3x^2 > 14x - 8$ (4 marks)

Question 12

A triangle and a square are shown.



Work out the range of values of n for which

area of triangle $<$ area of square

(5 marks)