5.9 Drawing Quadratic Graphs: 10-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Complete the table of values for $y = x^2 - 2x$.
Fill in values for $x = 0$ and $x = 2$.

(a) Find y when x = 0. **(1)**

.....

(b) Find y when x = 2. **(1)**

.....

(Total for Question 1 is 2 marks)

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2 Plot the points for the function $y = x^2 - 1$ for x = -1, 0 and 1. Give the three pairs as (x, y).

(a) Find y when x = -1. **(1)**

.....

(b) Write down the three coordinate pairs for x = -1, 0, 1. **(1)**

.....

(Total for Question 2 is 2 marks)

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3 Write down the coordinates of the point where the graph of $y = x^2 + 5x - 4$ crosses the y-axis.

(Total for Question 3 is 1 mark)

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4 State whether the graph of $y = 8 - 3x^2$ is u-shaped or n-shaped.

(Total for Question 4 is 1 mark)

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5 Write down the coordinates of the minimum point of the graph of $y = (x - 2)^2 + 5$.

(Total for Question 5 is 1 mark)

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6 Four students each drew a table of values for $y = x^2 + 2x$, for $-3 \leq x \leq 3$. Only one table is correct.

(a) Which table is correct? **(1)**

- ☐ A) x: -3,-2,-1,0,1,2,3 -> y: 3,0,-1,0,3,8,15
- ☐ B) x: -3,-2,-1,0,1,2,3 -> y: 15,8,3,0,-1,0,3
- ☐ C) x: -3,-2,-1,0,1,2,3 -> y: 9,4,1,0,1,4,9
- ☐ D) x: -3,-2,-1,0,1,2,3 -> y: 11,6,3,2,3,6,11

(b) Give a reason for your answer. **(1)**

(Total for Question 6 is 2 marks)

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Mark scheme · 5.9 Drawing Quadratic Graphs: 10-minute Pack

Question 1

(a) 0 cao **B1**

(a) Answer: 0 [$0^2 - 2(0) = 0$]

(b) 0 cao **B1**

(b) Answer: 0 [$2^2 - 2(2) = 4 - 4 = 0$]

Question 2

(a) 0 cao **B1**

(a) Answer: 0 [$(-1)^2 - 1 = 1 - 1 = 0$]

(b) (-1, 0), (0, -1), (1, 0) cao **B1**

(b) Answer: (-1, 0), (0, -1), (1, 0)

Question 3

(0, -4) oe **B1**

Answer: (0, -4)

Question 4

n-shaped **B1**

Answer: n-shaped

Question 5

(2, 5) **B1**

Answer: (2, 5)

Question 6

(a) A **B1**

(a) Answer: A

(b) correct substitution check shown for at least one value, e.g. at x=1, $1^2+2(1)=1+2=3$ oe **B1**

(b) Answer: At x = 1: $1^2 + 2(1) = 1 + 2 = 3$, which only matches table A

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