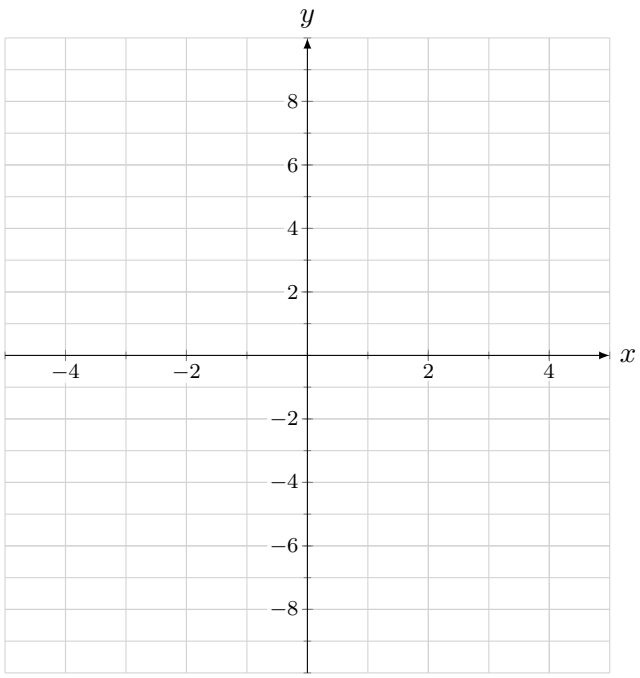
Warmup: Continue the Pattern

Adapted from Principles of Mathematics 10, McGraw-Hill Ryerson, 2007.

Work alone or with the person beside you.

1. Sketch the parabola $y = -2(x-1)^2 + 5$ on the grid by the step pattern. Use no table. Then write its vertex and its axis of symmetry.



Vertex _____

Axis of symmetry _____

2. Here is a pattern:

$$2^3 = 8 \qquad 2^2 = 4 \qquad 2^1 = 2$$

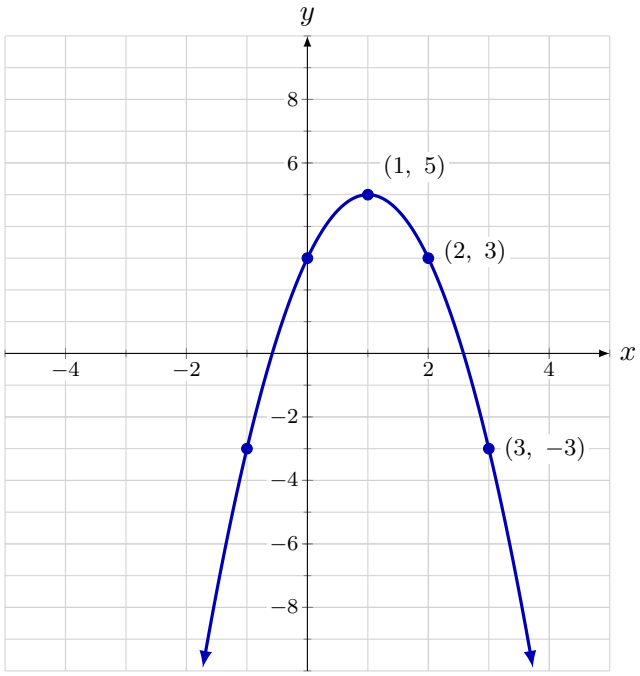
What might come next? Write one more line.

Warmup: Continue the Pattern — Answers

Adapted from Principles of Mathematics 10, McGraw-Hill Ryerson, 2007.

Answers in words are model sentences. Other answers with a clear reason are fine.

1. Sketch the parabola $y = -2(x-1)^2 + 5$ on the grid by the step pattern. Use no table. Then write its vertex and its axis of symmetry.



Vertex (1, 5)

Axis of symmetry $x = 1$

$a = -2$: from the vertex, step 1 right and down 2, then 1 more right and down 6. Mirror each point across the axis $x = 1$.

Check $(3, -3)$:
$-2(3-1)^2 + 5 = -8 + 5 = -3$.

2. Here is a pattern:

$$2^3 = 8 \qquad 2^2 = 4 \qquad 2^1 = 2$$

What might come next? Write one more line.

$2^0 = 1$. The exponent goes down by 1 and the value is halved each time, so next comes $2 \div 2 = 1$. (Any line that continues the pattern is fine; the cards find out whether it must be so.)