

Quadratic Function - Vertex Form

Sheet 1

Find a quadratic function with the given vertex and passing through the given point.

- 1) Vertex $(4, 5)$; passes through $(1, 2)$.
- 2) Vertex $(1, 3)$; passes through $(4, -2)$.
- 3) Vertex $(-5, 2)$; passes through $(-4, 9)$.
- 4) Vertex $(3, -2)$; passes through $(-3, -3)$.
- 5) Vertex $(-6, 1)$; passes through $(2, 5)$.
- 6) Vertex $(4, 0)$; passes through $(7, 8)$.
- 7) Vertex $(0, -3)$; passes through $(-5, -1)$.
- 8) Vertex $(2, -4)$; passes through $(3, -5)$.

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Find a quadratic function with the given vertex and passing through the given point.

1) Vertex (4, 5) ; passes through (1, 2).

$$f(x) = -\frac{1}{3}(x - 4)^2 + 5$$

2) Vertex (1, 3) ; passes through (4, -2).

$$f(x) = -\frac{5}{9}(x - 1)^2 + 3$$

3) Vertex (-5, 2) ; passes through (-4, 9).

$$f(x) = 7(x + 5)^2 + 2$$

4) Vertex (3, -2) ; passes through (-3, -3).

$$f(x) = -\frac{1}{36}(x - 3)^2 - 2$$

5) Vertex (-6, 1) ; passes through (2, 5).

$$f(x) = \frac{1}{16}(x + 6)^2 + 1$$

6) Vertex (4, 0) ; passes through (7, 8).

$$f(x) = \frac{8}{9}(x - 4)^2$$

7) Vertex (0, -3) ; passes through (-5, -1).

$$f(x) = \frac{2}{25}x^2 - 3$$

8) Vertex (2, -4) ; passes through (3, -5).

$$f(x) = -(x - 2)^2 - 4$$