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

1) Vertex (2, –1); passes through (4, 3).
2) Vertex (5, 4); passes through (–2, –5).
3) Vertex (3, 4); passes through (0, –1).
4) Vertex (11, 2); passes through (5, 6).
5) Vertex (0, 3); passes through (–3, 2).
6) Vertex (–2, 0); passes through (–6, –3).
7) Vertex (5, –2); passes through (10, 1).
8) Vertex (–5, 9); passes through (–4, 2).
Find a quadratic function with the given vertex and passing through the given point.

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

\[ f(x) = (x - 2)^2 - 1 \]

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

\[ f(x) = \frac{9}{4} (x - 5)^2 + 4 \]

3) Vertex \((3, 4)\); passes through \((5, 6)\).

\[ f(x) = -\frac{5}{9} (x - 3)^2 - 3 \]

4) Vertex \((-1, -3)\); passes through \((5, 6)\).

\[ f(x) = \frac{1}{9} x^2 + 3 \]

5) Vertex \((0, 3)\); passes through \((-6, -3)\).

\[ f(x) = -\frac{1}{9} (x - 2)^2 \]

6) Vertex \((5, -2)\); passes through \((10, 1)\).

\[ f(x) = \frac{3}{25} (x - 5)^2 - 2 \]

7) Vertex \((5, -2)\); passes through \((10, 1)\).

\[ f(x) = -\frac{1}{9} (x - 2)^2 \]

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

\[ f(x) = -7(x + 5)^2 + 9 \]