

Identify the vertex and axis of symmetry of each. Then sketch the graph.

1) $f(x) = x^2 + 2x + 4$

2) $f(x) = \frac{2}{5}x^2 + \frac{12}{5}x + \frac{8}{5}$

3) $f(x) = x^2 + 12x + 30$

4) $f(x) = 2x^2 + 20x + 49$

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

6) $f(x) = -\frac{1}{4}x^2 + \frac{3}{2}x - \frac{21}{4}$

7) $f(x) = x^2 + 10x + 24$

8) $f(x) = \frac{1}{3}x^2 - \frac{10}{3}x + \frac{13}{3}$

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

10) $f(x) = -x^2 - 10x - 24$