12-04-10-T10 quadratic function

Identify the vertex, axis of symmetry, direction of opening, min/max value, and y-intercept of each.

1) $f(x) = x^2 + 20x + 97$

2) $f(x) = -2x^2 + 32x - 128$

3) $f(x) = -3x^2 - 60x - 304$

4) $f(x) = -\frac{1}{2}x^2 + x + \frac{7}{2}$

5) $f(x) = -x^2 - 6x - 6$

6) $f(x) = 6x^2 - 84x + 297$

7) $f(x) = 2x^2 + 12x + 20$

8) $f(x) = x^2 + 12x + 42$

Answers to 12-04-10-T10 quadratic function

1) Vertex: $(-10, -3)$
Axis of Sym.: $x = -10$
Opens: Up
Min value = -3
y-int: 97

2) Vertex: $(8, 0)$
Axis of Sym.: $x = 8$
Opens: Down
Max value = 0
y-int: -128

3) Vertex: $(-10, -4)$
Axis of Sym.: $x = -10$
Opens: Down
Max value = -4
y-int: -304

4) Vertex: $(1, 4)$
Axis of Sym.: $x = 1$
Opens: Down
Max value = 4
y-int: $\frac{7}{2}$

5) Vertex: $(-3, 3)$
Axis of Sym.: $x = -3$
Opens: Down
Max value = 3
y-int: -6

6) Vertex: $(7, 3)$
Axis of Sym.: $x = 7$
Opens: Up
Min value = 3
y-int: 297

7) Vertex: $(-3, 2)$
Axis of Sym.: $x = -3$
Opens: Up
Min value = 2
y-int: 20

8) Vertex: $(-6, 6)$
Axis of Sym.: $x = -6$
Opens: Up
Min value = 6
y-int: 42