Math Worksheets

Focus, Vertex, and Directrix of a Parabola

✎ **Use the information provided to write the vertex form equation of each parabola.**

1) $y = x^2 + 4x - 6$

2) $y = x^2 - 10x + 22$

3) $y + 4 = x^2 + 8x$

4) $y = x^2 + 6x + 13$

5) $y - 41 = (x + 10)(x - 2)$

6) $\frac{1}{3}(y - 9) = (x - 6)^2$

7) $98x + 346 = -y - 7x^2$

8) $y = x^2 + 10x + 32$

9) Focus: $(-\frac{35}{2}, -5)$, Directrix: $x = -\frac{37}{2}$

10) Focus: $(\frac{97}{16}, 4)$, Directrix: $x = \frac{95}{16}$

11) Opens down or up, and passes through $(-2, -6), (-8, -6)$, and $(-5, 3)$

12) Opens down or up, and passes through $(4, 8), (5, 11)$, and $(2, 8)$

Answers of Worksheets

Focus, Vertex, and the Directrix of a Parabola

1) $y = (x + 2)^2 - 10$

2) $y = (x - 5)^2 - 3$

3) $y = (x + 4)^2 - 20$

4) $y = (x + 3)^2 + 4$

5) $y = (x + 4)^2 + 5$

6) $y = 3(x - 6)^2 + 9$

7) $y = -7(x + 7)^2 - 3$

8) $y = (x + 5)^2 + 7$

9) $x = \frac{1}{2}(y + 5)^2 - 18$

10) $x = 4(y - 4)^2 + 6$

11) $y = -(x + 5)^2 + 3$

12) $y = (x - 3)^2 + 7$