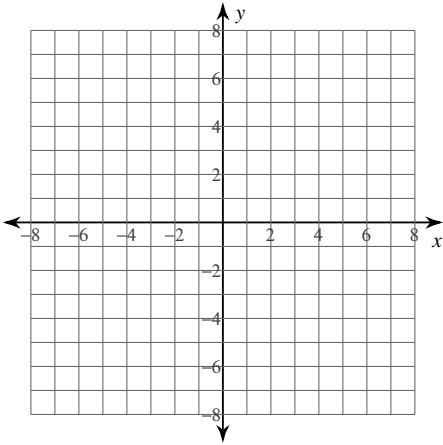


Parabolas

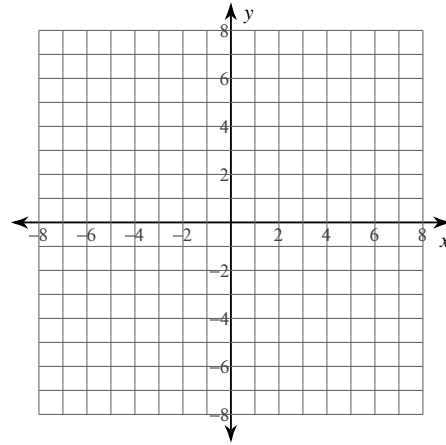
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Identify the vertex, focus, and directrix of each. Then sketch the graph.

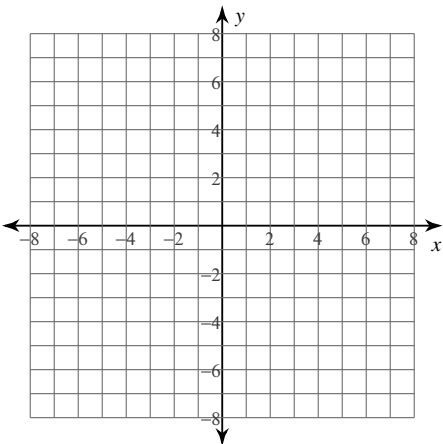
1) $y - 1 = (x - 2)^2$



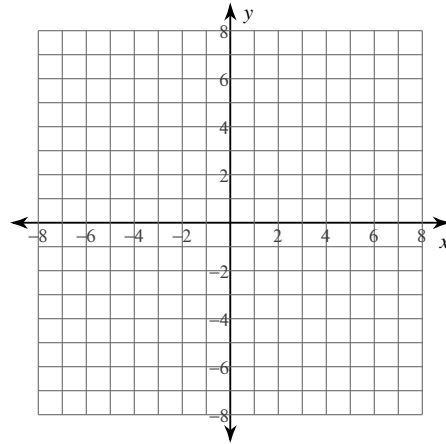
2) $4(x - 1) = (y + 2)^2$



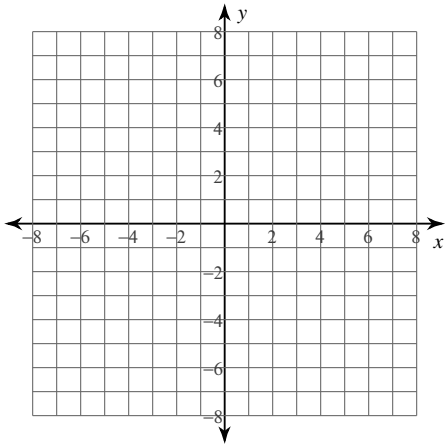
3) $-\frac{1}{2}(x - 2) = (y - 1)^2$



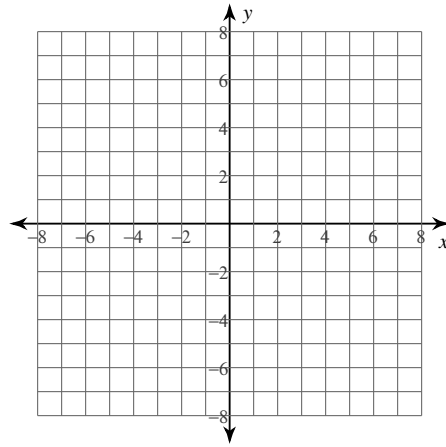
4) $-2(y + 3) = (x + 4)^2$



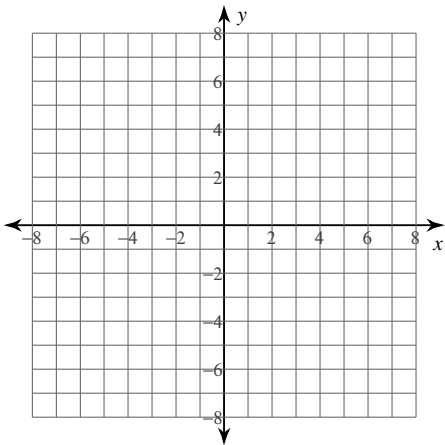
5) $2x^2 + 12x + y + 21 = 0$



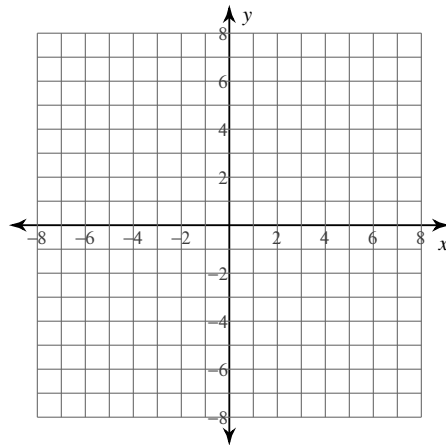
6) $y^2 + x - 2y + 1 = 0$



7) $-2x^2 - 8x + y - 5 = 0$



8) $-y^2 + 2x - 4y - 2 = 0$



Use the information provided to write the standard form equation of each parabola.

9) Vertex: $(-6, 8)$, Focus: $(-6, \frac{31}{4})$

10) Vertex: $(4, -7)$, Focus: $(\frac{9}{2}, -7)$

11) Vertex: $(5, 6)$, Directrix: $y = \frac{25}{4}$

12) Vertex: $(-2, 8)$, Directrix: $x = -\frac{17}{8}$

13) Focus: $\left(\frac{17}{8}, 9\right)$, Directrix: $x = \frac{15}{8}$

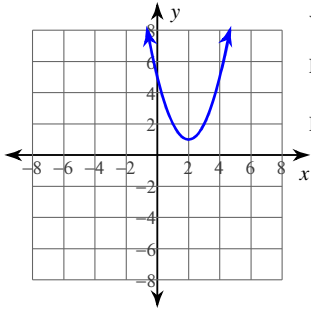
14) Focus: $\left(-\frac{25}{4}, -10\right)$, Directrix: $x = -\frac{31}{4}$

15) Focus: $\left(-2, \frac{9}{4}\right)$, Directrix: $y = \frac{7}{4}$

16) Focus: $\left(-\frac{35}{4}, -8\right)$, Directrix: $x = -\frac{37}{4}$

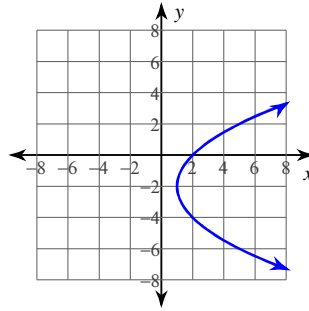
Answers to Parabolas

1)



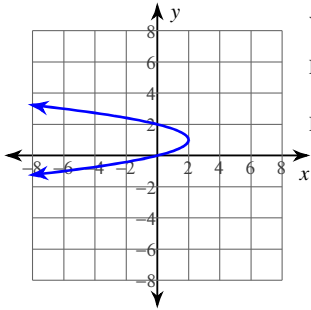
Vertex: $(2, 1)$
 Focus: $(2, \frac{5}{4})$
 Directrix: $y = \frac{3}{4}$

2)



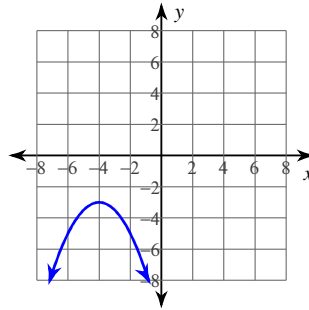
Vertex: $(1, -2)$
 Focus: $(2, -2)$
 Directrix: $x = 0$

3)



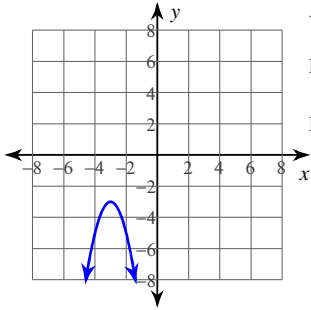
Vertex: $(2, 1)$
 Focus: $(\frac{15}{8}, 1)$
 Directrix: $x = \frac{17}{8}$

4)



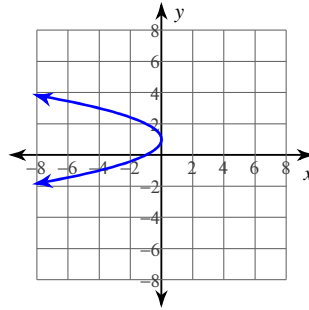
Vertex: $(-4, -3)$
 Focus: $(-4, -\frac{7}{2})$
 Directrix: $y = -\frac{5}{2}$

5)



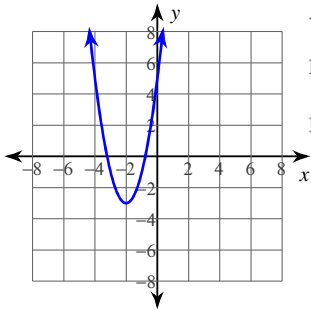
Vertex: $(-3, -3)$
 Focus: $(-3, -\frac{25}{8})$
 Directrix: $y = -\frac{23}{8}$

6)



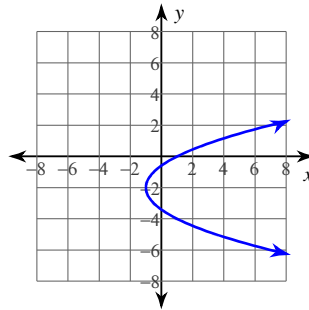
Vertex: $(0, 1)$
 Focus: $(-\frac{1}{4}, 1)$
 Directrix: $x = \frac{1}{4}$

7)



Vertex: $(-2, -3)$
 Focus: $(-2, -\frac{23}{8})$
 Directrix: $y = -\frac{25}{8}$

8)



Vertex: $(-1, -2)$
 Focus: $(-\frac{1}{2}, -2)$
 Directrix: $x = -\frac{3}{2}$

9) $-(y - 8) = (x + 6)^2$

10) $2(x - 4) = (y + 7)^2$

11) $-(y - 6) = (x - 5)^2$

12) $\frac{1}{2}(x + 2) = (y - 8)^2$

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

14) $3(x + 7) = (y + 10)^2$

15) $y - 2 = (x + 2)^2$

16) $x + 9 = (y + 8)^2$