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Algebra II Practice G.GPE.A.2 Graphing Quadratic Functions 3b

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

1) Vertex at origin, opens up, $\frac{1}{4}$ units between the vertex and focus

2) Vertex at origin, opens up, $\frac{1}{36}$ units between the vertex and focus

3) Vertex at origin, opens down, $\frac{1}{8}$ units between the vertex and focus

4) Vertex at origin, opens up, $\frac{1}{20}$ units between the vertex and focus

5) Vertex at origin, Focus: $\left(0, -\frac{1}{12}\right)$

6) Vertex at origin, Focus: $\left(0, -\frac{5}{8}\right)$

7) Vertex at origin, Focus: $\left(0, -\frac{1}{4}\right)$

8) Vertex at origin, Focus: $\left(0, -\frac{3}{4}\right)$

9) Vertex at origin, Directrix: $y = -\frac{1}{16}$

10) Vertex at origin, Directrix: $y = \frac{5}{16}$

11) Vertex at origin, Directrix: $y = -\frac{1}{8}$

12) Vertex at origin, Directrix: $y = \frac{1}{2}$

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13) Vertex: $(-5, -10)$, Focus: $\left(-5, -\frac{39}{4}\right)$

14) Vertex: $(-8, -7)$, Focus: $(-8, -6)$

15) Vertex: $(5, 9)$, Focus: $\left(5, \frac{71}{8}\right)$

16) Vertex: $(-2, 5)$, Focus: $\left(-2, \frac{19}{4}\right)$

17) Vertex: $(0, 1)$, Directrix: $y = \frac{9}{8}$

18) Vertex: $(-4, -10)$, Directrix: $y = -\frac{79}{8}$

19) Vertex: $(0, -8)$, Directrix: $y = -\frac{63}{8}$

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

21) Focus: $\left(1, \frac{49}{12}\right)$, Directrix: $y = \frac{47}{12}$

22) Focus: $\left(-4, \frac{19}{2}\right)$, Directrix: $y = \frac{21}{2}$

23) Focus: $\left(3, \frac{19}{4}\right)$, Directrix: $y = \frac{21}{4}$

24) Focus: $\left(-1, \frac{39}{8}\right)$, Directrix: $y = \frac{41}{8}$

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Algebra II Practice G.GPE.A.2 Graphing Quadratic Functions 3b

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

1) Vertex at origin, opens up, $\frac{1}{4}$ units between the vertex and focus

$y = x^2$

2) Vertex at origin, opens up, $\frac{1}{36}$ units between the vertex and focus

$y = 9x^2$

3) Vertex at origin, opens down, $\frac{1}{8}$ units between the vertex and focus

$y = -2x^2$

4) Vertex at origin, opens up, $\frac{1}{20}$ units between the vertex and focus

$y = 5x^2$

5) Vertex at origin, Focus: $\left(0, -\frac{1}{12}\right)$

$y = -3x^2$

6) Vertex at origin, Focus: $\left(0, -\frac{5}{8}\right)$

$y = -\frac{2}{5}x^2$

7) Vertex at origin, Focus: $\left(0, -\frac{1}{4}\right)$

$y = -x^2$

8) Vertex at origin, Focus: $\left(0, -\frac{3}{4}\right)$

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

9) Vertex at origin, Directrix: $y = -\frac{1}{16}$

$y = 4x^2$

10) Vertex at origin, Directrix: $y = \frac{5}{16}$

$y = -\frac{4}{5}x^2$

11) Vertex at origin, Directrix: $y = -\frac{1}{8}$

$y = 2x^2$

12) Vertex at origin, Directrix: $y = \frac{1}{2}$

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

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13) Vertex: $(-5, -10)$, Focus: $\left(-5, -\frac{39}{4}\right)$

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

14) Vertex: $(-8, -7)$, Focus: $(-8, -6)$

$y = \frac{1}{4}(x + 8)^2 - 7$

15) Vertex: $(5, 9)$, Focus: $\left(5, \frac{71}{8}\right)$

$y = -2(x - 5)^2 + 9$

16) Vertex: $(-2, 5)$, Focus: $\left(-2, \frac{19}{4}\right)$

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

17) Vertex: $(0, 1)$, Directrix: $y = \frac{9}{8}$

$y = -2x^2 + 1$

18) Vertex: $(-4, -10)$, Directrix: $y = -\frac{79}{8}$

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

19) Vertex: $(0, -8)$, Directrix: $y = -\frac{63}{8}$

$y = -2x^2 - 8$

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

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

21) Focus: $\left(1, \frac{49}{12}\right)$, Directrix: $y = \frac{47}{12}$

$y = 3(x - 1)^2 + 4$

22) Focus: $\left(-4, \frac{19}{2}\right)$, Directrix: $y = \frac{21}{2}$

$y = -\frac{1}{2}(x + 4)^2 + 10$

23) Focus: $\left(3, \frac{19}{4}\right)$, Directrix: $y = \frac{21}{4}$

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

24) Focus: $\left(-1, \frac{39}{8}\right)$, Directrix: $y = \frac{41}{8}$

$y = -2(x + 1)^2 + 5$

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