NAME:_____

1. Write an equation of the parabola with its vertex at the origin if its directrix is $y = 4$.

   [A] $y = -16x^2$ [B] $x = -\frac{1}{16}y^2$ [C] $y = -\frac{1}{16}x^2$ [D] $x = 4y^2$

2. Write an equation of the parabola with its vertex at the origin if its focus is at (0, –6).

   [A] $x = -\frac{1}{24}y^2$ [B] $y = -\frac{1}{24}x^2$ [C] $y = 6x^2$ [D] $y = -6x^2$

3. Write an equation of the parabola with its vertex at the origin if its focus is at (0, –3).

   [A] $y = -\frac{1}{12}x^2$ [B] $x = -\frac{1}{12}y^2$ [C] $y = 3x^2$ [D] $y = -3x^2$

4. Compare the quantity in Column A with the quantity in Column B.

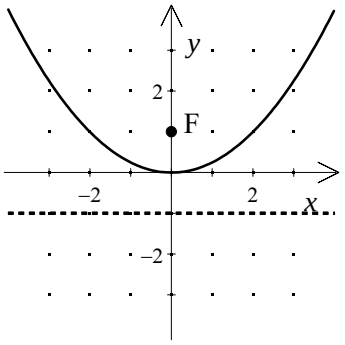
Column A	Column B
-5	the y-coordinate of the focus of $y = -\frac{1}{20}x^2$

   [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.

   [C] The two quantities are equal.

   [D] The relationship cannot be determined on the basis of the information supplied.

5. Use the information in the graph to write an equation for the parabola.



NAME:_____

6. Write an equation of the parabola with its vertex at the origin if its focus is at (0, –5).

7. Write an equation of the parabola with its vertex at the origin if its directrix is $y = -2$.

8. Write an equation of the parabola with its vertex at the origin if its directrix is $y = -5$.

9. Find an equation for the parabola with focus at (–5, –4) and vertex at (–5, –3).

10. Find an equation for the parabola with focus at (1, –3) and vertex at (1, –7).

11. Find an equation for the parabola with focus at (–4, 5) and vertex at (–4, –1).

12. Find an equation for the parabola with focus at (3, 6) and vertex at (3, 4).

13. Find an equation for the parabola with focus at (6, 8) and vertex at (6, 5).

14. Find an equation for the parabola with focus at (–3, –11) and vertex at (–3, –6).

15. The shape of a solar collector can be modeled by the equation $y = \frac{1}{8}x^2$, where x and y are in inches. Find the distance from the vertex to the focus.

[1] C

[2] B

[3] A

[4] C

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

[6] $y = -\frac{1}{20}x^2$

[7] $y = \frac{1}{8}x^2$

[8] $y = \frac{1}{20}x^2$

[9] $x^2 + 10x + 4y + 37 = 0$

[10] $x^2 - 2x - 16y - 111 = 0$

[11] $x^2 + 8x - 24y - 8 = 0$

[12] $x^2 - 6x - 8y + 41 = 0$

[13] $x^2 - 12x - 12y + 96 = 0$

[14] $x^2 + 6x + 20y + 129 = 0$

[15] 2 in.