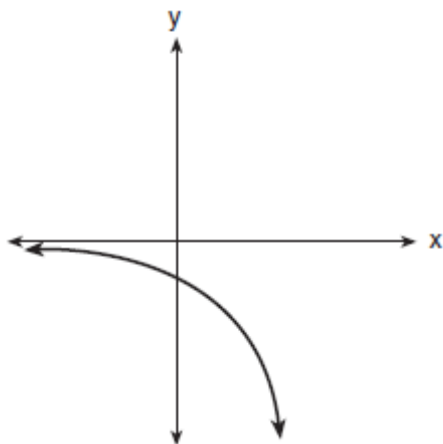


NAME: _____

1. 080901b, P.I. A2.A.52

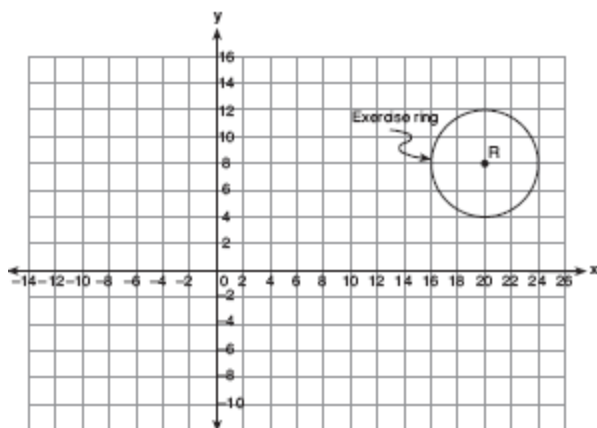
Which equation is represented by the accompanying graph?



- [A] $y = x^2 - 2$ [B] $y = 2^x$
 [C] $y = -2^x$ [D] $y = 2^{-x}$

2. 060730b

A landscape architect is working on the plans for a new horse farm. He is laying out the exercise ring and racetrack on the accompanying graph. The location of the circular exercise ring, with point R as its center, has already been plotted.

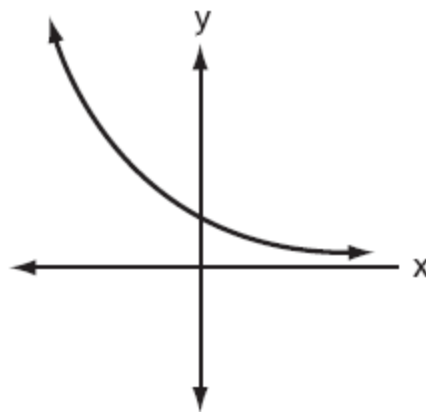


Write an equation that represents the outside edge of the exercise ring. The equation of the outside edge of the racetrack is $\frac{x^2}{144} + \frac{y^2}{36} = 1$.

Sketch the outside edge of the racetrack on the graph.

3. 010701b, P.I. A2.A.52

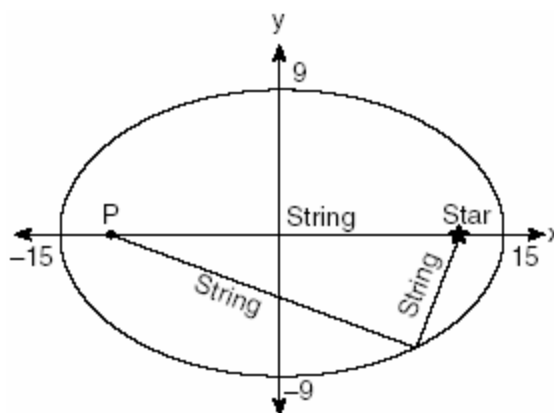
Which equation best represents the accompanying graph?



- [A] $y = 2^{-x}$ [B] $y = 2^x$
 [C] $y = x^2 + 2$ [D] $y = -2^x$

4. 010517b, P.I. A2.A.52

The accompanying diagram shows the construction of a model of an elliptical orbit of a planet traveling around a star. Point P and the center of the star represent the foci of the orbit.



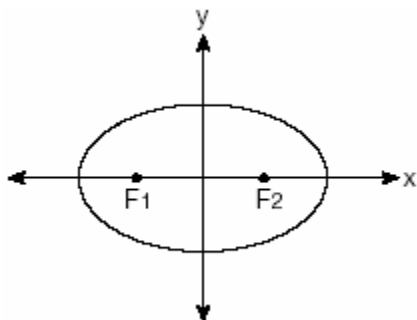
Which equation could represent the relation shown?

- [A] $\frac{x^2}{15} - \frac{y^2}{9} = 1$ [B] $\frac{x^2}{225} + \frac{y^2}{81} = 1$
 [C] $\frac{x^2}{15} + \frac{y^2}{9} = 1$ [D] $\frac{x^2}{81} + \frac{y^2}{225} = 1$

NAME: _____

5. 010410b, P.I. A2.A.52

The accompanying diagram shows the elliptical orbit of a planet. The foci of the elliptical orbit are F_1 and F_2 .

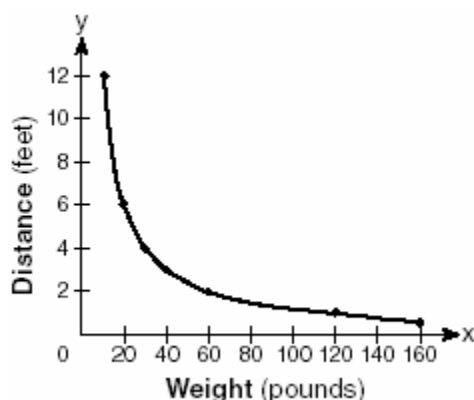


If a , b , and c are all positive and $a \neq b \neq c$, which equation could represent the path of the planet?

- [A] $x^2 + y^2 = c^2$ [B] $ax^2 - by^2 = c^2$
 [C] $y = ax^2 + c^2$ [D] $ax^2 + by^2 = c^2$

6. 080312b, P.I. A2.A.52

The accompanying graph shows the relationship between a person's weight and the distance that the person must sit from the center of a seesaw to make it balanced.

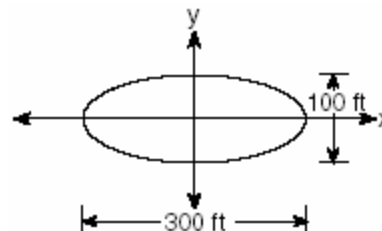


Which equation best represents this graph?

- [A] $y = \frac{120}{x}$ [B] $y = -120x$
 [C] $y = 12x^2$ [D] $y = 2 \log x$

7. 060311b, P.I. A2.A.52

The accompanying diagram represents the elliptical path of a ride at an amusement park.

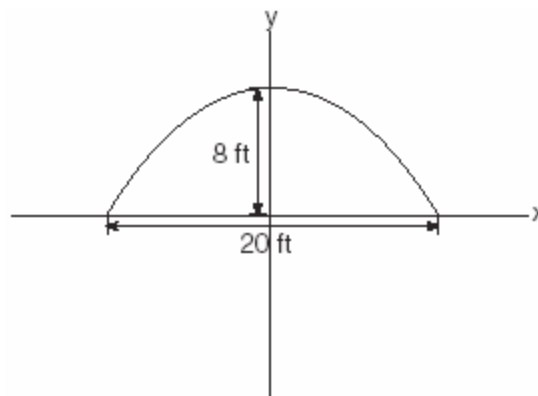


Which equation represents this path?

- [A] $x^2 + y^2 = 300$ [B] $\frac{x^2}{150^2} + \frac{y^2}{50^2} = 1$
 [C] $\frac{x^2}{150^2} - \frac{y^2}{50^2} = 1$
 [D] $y = x^2 + 100x + 300$

8. 080206b, P.I. A2.A.52

An architect is designing a building to include an arch in the shape of a semi-ellipse (half an ellipse), such that the width of the arch is 20 feet and the height of the arch is 8 feet, as shown in the accompanying diagram.



Which equation models this arch?

- [A] $\frac{x^2}{64} + \frac{y^2}{400} = 1$ [B] $\frac{x^2}{400} + \frac{y^2}{64} = 1$
 [C] $\frac{x^2}{64} + \frac{y^2}{100} = 1$ [D] $\frac{x^2}{100} + \frac{y^2}{64} = 1$

NAME: _____

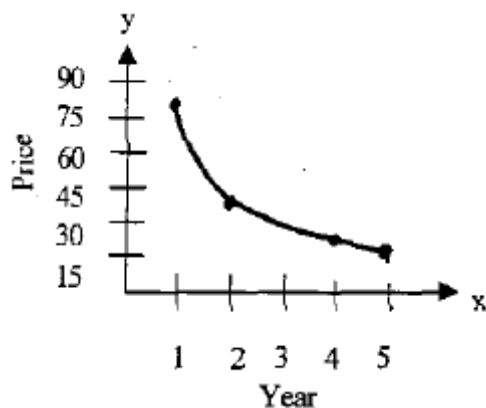
9. 060209b, P.I. A2.A.52

What is the equation of a parabola that goes through points (0,1), (-1,6), and (2,3)?

- [A] $y = x^2 + 1$ [B] $y = 2x^2 + 1$
 [C] $y = x^2 - 3x + 1$ [D] $y = 2x^2 - 3x + 1$

10. fall9913b, P.I. A2.A.52

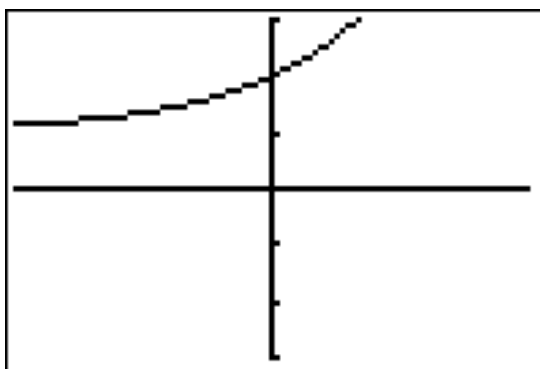
The price of a certain stock has decreased over 5 years, as shown in the graph below. Which of the following equations best represents this graph?



- [A] $y = \frac{80}{x}$ [B] $y = 60x^2$
 [C] $y = 63 \log x$ [D] $y = -25x$

11. fall9902b, P.I. A2.A.52

The graph below can be represented by which equation?



- [A] $y = 2^{x+1}$ [B] $y = x^2 + 2$
 [C] $y = 2^x + 1$ [D] $y = 2^x$

[1] C _____

[4] $(x - 20)^2 + (y - 8)^2 = 16$ and the ellipse is
sketched correctly.

[3] Appropriate work is shown, but one
computational or graphing error is made.

[2] Appropriate work is shown, but two or
more computational or graphing errors are
made.

or [2] Appropriate work is shown, but one
conceptual error is made.

or [2] The equation of the circle is written
correctly or the ellipse is sketched correctly,
but no further correct work is shown.

[1] Appropriate work is shown, but one
conceptual error and one computational or
graphing error are made.

[0] A zero response is completely incorrect,
irrelevant, or incoherent or is a correct
response that was obtained by an obviously

[2] incorrect procedure. _____

[3] A _____

[4] B _____

[5] D _____

[6] A _____

[7] B _____

[8] D _____

[9] D _____

[10] A _____

[11] C _____