

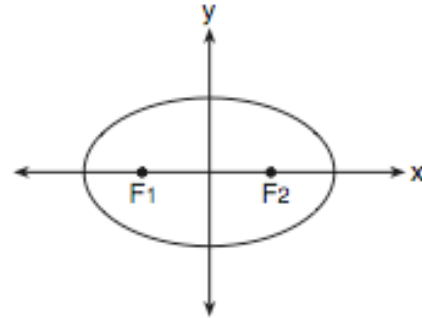
1. Camisha is paying a band \$330 to play at her graduation party. The amount each member earns, d , varies inversely as the number of members who play, n . The graph of the equation that represents the relationship between d and n is an example of

- (1) a hyperbola (3) a parabola
 (2) a line (4) an ellipse

2. Which equation defines a relation that is *not* a function?

- (1) $y = 2x + 3$ (3) $x^2 + y^2 = 25$
 (2) $y = x^2$ (4) $y = 3$

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



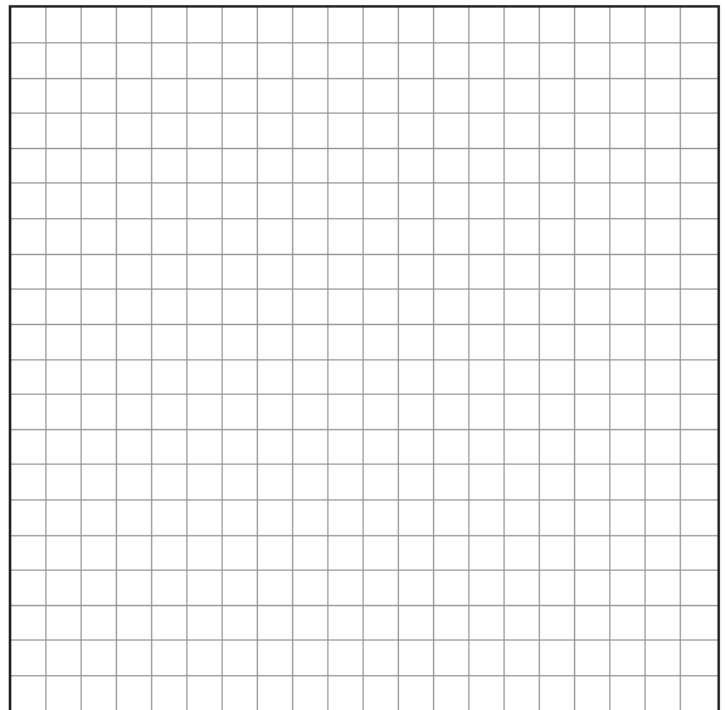
If a , b , and c are all positive and $a \neq b \neq c$, which equation could represent the path of the planet?

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

5. Chad had a garden that was in the shape of a rectangle. Its length was twice its width. He decided to make a new garden that was 2 feet longer and 2 feet wider than his first garden. If x represents the original width of the garden, express the difference between the area of his new garden and the area of the original garden in terms of x .

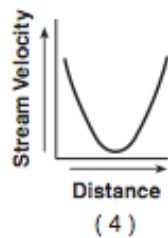
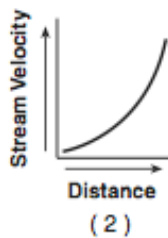
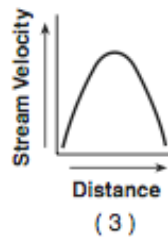
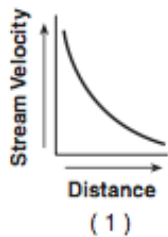
6. Draw the graph of the equation:

$$9(y + 2)^2 - 9(x - 3)^2 = 81$$



7. When a current, I , flows through a given electrical circuit, the power, W , of the circuit can be determined by the formula $W = 120I - 12I^2$. What amount of current, I , supplies the maximum power, W ?

8. Which graph represents an inverse variation between stream velocity and the distance from the center of the stream?



9. Which of the following is both a function and a hyperbola?

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

10. Find the inverse of the function $f(x) = -\frac{1}{3}x + 2$ and sketch both f and f^{-1} on the accompanying grid.

State the coordinates of a point on the inverse function.

