Identify the x-intercept(s) and vertical asymptote(s) of the graph of the function.

1. \( y = \frac{-6}{x^2 - 2} \)

Graph the function.

4. \( f(x) = \frac{-5x}{x^2 - 9} \)

5. \( f(x) = \frac{2x^2 + 3x - 9}{x} \)

6. \( f(x) = \frac{x^2 + x - 20}{x^3 - 8} \)

7. \( f(x) = \frac{3x^2 + 2x - 8}{x^2 + 3} \)

8. \( f(x) = \frac{x^2 + 3x + 21}{3x^2 - 16} \)

9. \( f(x) = \frac{2x^3 + 14}{x^3 - 24} \)

10. **Critical Thinking**
    Give an example of a rational function whose graph has two vertical asymptotes, \( x = 2 \) and \( x = 3 \), two x-intercepts, 0 and \(-1\), and one horizontal asymptote, \( y = 2 \).

In Exercises 11–14, use the following information.

**Minimize Material**
A marketing campaign advertised that a company’s standard product has a volume of 320 cubic centimeters. The product is delivered in cylindrical aluminum cans.

11. Use the volume formula \( V = \pi r^2 h \) to express the can’s height \( h \) as a function of the can’s radius \( r \).

12. Use the surface area formula \( S = 2\pi r^2 + 2\pi rh \) and your answer from Exercise 11 to express the can’s surface area as a function of the can’s radius.

13. Graph the function from Exercise 12 for \( 0 < r \leq 10 \).

14. Find the dimensions of the can that has a volume of 320 cubic centimeters and uses the least amount of material possible.