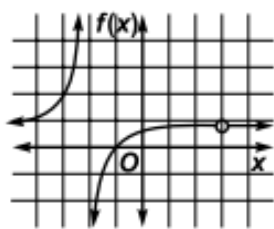


1. The graph of the equation $y = x^3 - x$ is symmetric with respect to which of the following?
A. the x -axis **B.** the y -axis **C.** the origin **D.** none of these

2. Which is true for the graph of $y = \frac{x^2 - 4}{x^2 + 9}$?
A. vertical asymptotes at $x = \pm 3$ **B.** horizontal asymptotes at $y = \pm 2$
C. vertical asymptotes at $x = \pm 2$ **D.** horizontal asymptote at $y = 1$

3. Which of the following could be the function represented by the graph at the right?

A. $f(x) = \frac{x+1}{x+2}$ **B.** $f(x) = \frac{(x+1)(x-3)}{(x-3)(x+2)}$
C. $f(x) = \frac{x+1}{x-2}$ **D.** $f(x) = \frac{(x+1)(x+3)}{(x+3)(x+2)}$



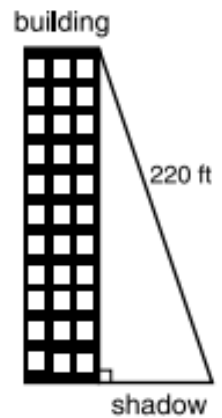
4. Find the inverse of $f(x) = \frac{1}{x-2}$.

A. $f^{-1}(x) = \frac{1}{x-2}$ **B.** $f^{-1}(x) = \frac{1}{x} + 2$
C. $f^{-1}(x) = x + 2$ **D.** $f^{-1}(x) = \frac{1}{x} - 2$

5. Use the Remainder Theorem to find the remainder when $16x^5 - 32x^4 - 81x + 162$ is divided by $x - 2$. State whether the binomial is a factor of the polynomial.
A. 1348; no **B.** 0; yes **C.** -700; yes **D.** 0; no

6. Find the value of k so that the remainder of $(x^3 + 3x^2 - kx - 24) \div (x + 4)$ is 0.
A. -22 **B.** -10 **C.** 22 **D.** 10

7. **For Exercises 14 and 15, refer to the figure. The angle of elevation from the end of the shadow to the top of the building is 63° and the distance is 220 feet.**



14. Find the height of the building to the nearest foot.
A. 100 ft B. 196 ft
C. 432 ft D. 112 ft

8. 15. Find the length of the shadow to the nearest foot.
A. 100 ft B. 196 ft
C. 432 ft D. 112 ft

9. 16. If $0^\circ \leq x \leq 360^\circ$, solve the equation $\sec x = -2$.
A. 150° and 210° B. 210° and 330°
C. 120° and 240° D. 240° and 300°

10. Label ALL parts of the Unit Circle:

