1. Evaluate the function at the given value of the independent variable and simplify.

\[ f(x) = \frac{x^3 + 2}{x^2 + 6}; \ f(-2) \]

- A. \( \frac{3}{5} \)
- B. \( -\frac{3}{2} \)
- C. \( -\frac{4}{5} \)
- D. \( -\frac{3}{5} \)

2. Find and simplify the difference quotient \( \frac{f(x + h) - f(x)}{h} \), \( h \neq 0 \) for the given function.

\[ f(x) = \frac{1}{6x} \]

- A. \( -\frac{1}{6x(x+h)} \)
- B. 0
- C. \( -\frac{1}{x(x+h)} \)
- D. \( \frac{1}{6x} \)

3. Use the given conditions to write an equation for the line in slope-intercept form.

Slope = 4, passing through (7,2)

- A. \( y - 2 = 4x - 7 \)
- B. \( y = 4x - 26 \)
- C. \( y = 4x + 26 \)
- D. \( y - 2 = x - 7 \)
4. Begin by graphing the standard quadratic function \( f(x) = x^2 \). Then use transformations of this graph to graph the given function.

\[ h(x) = (x - 7)^2 - 2 \]

- **A.**
- **B.**
- **C.**
- **D.**

5. Find functions \( f \) and \( g \) so that \( h(x) = (f \circ g)(x) \).

\[ h(x) = \frac{1}{x^2 - 3} \]

- **A.** \( f(x) = \frac{1}{x^2}, \ g(x) = -\frac{1}{3} \)
- **B.** \( f(x) = \frac{1}{x}, \ g(x) = x^2 - 3 \)
- **C.** \( f(x) = \frac{1}{3}, \ g(x) = x^2 - 3 \)
- **D.** \( f(x) = \frac{1}{x^2}, \ g(x) = x - 3 \)

6. Find the inverse of the one-to-one function.

\[ f(x) = \frac{4x - 4}{3} \]

- **A.** \( f^{-1}(x) = \frac{3}{4x - 4} \)
- **B.** \( f^{-1}(x) = \frac{3}{4x + 4} \)
- **C.** \( f^{-1}(x) = \frac{3x - 4}{4} \)
- **D.** \( f^{-1}(x) = \frac{3x + 4}{4} \)
7. The area of a rectangular garden is 225 square feet. The garden is to be enclosed by a stone wall costing $30 per linear foot. The interior wall is to be constructed with brick costing $9 per linear foot. Express the cost $C$, to enclose the garden and add the interior wall as a function of $x$.

\[ C(x) = 9x + 30 \left( x + \frac{225}{x} \right) \]

\[ C(x) = 30x + 9 \left( 2x + \frac{450}{x} \right) \]

\[ C(x) = 9x + 30 \left( 2x + \frac{450}{x} \right) \]

\[ C(x) = 9x + 30 \left( 2x + \frac{225}{x} \right) \]
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