**Directions:** Find the derivatives of the given functions. Perform any "obvious" simplifications.

1. 
$$f(x) = 4x^5 - 3x^2 + 2x + 1$$

$$2. g(x) = \frac{x^3}{3} + \pi^3$$

$$3. \quad y = \frac{1}{5\sqrt[3]{x}}$$

$$4. \qquad g(x) = \frac{2}{x}$$

$$5. \quad h(x) = \frac{2 + \sqrt{2}}{x}$$

**Directions:** Find the derivatives of the given functions. Perform any "obvious" simplifications.

1. 
$$f(x) = 4x^4 - 2x^3 - x + 1$$

$$2. y = \frac{3}{x^3}$$

3. 
$$f(x) = \sqrt[3]{x^2} + \sqrt[3]{2}^2$$

$$4. \qquad g(x) = \frac{1}{2x^2}$$

$$5. \qquad h(x) = \frac{2+\pi}{x}$$