

Calculus Practice: Definition of Derivative 1a**Use the definition of the derivative to find the derivative of each function with respect to x .**

1) $f(x) = x + 3$

- A) $f'(x) = 1$
- B) $f'(x) = 5$
- C) $f'(x) = x + 5$
- D) $f'(x) = x + 4$

2) $y = 5x - 1$

- A) $\frac{dy}{dx} = 5x - 7$
- B) $\frac{dy}{dx} = 5x - 5$
- C) $\frac{dy}{dx} = 5$
- D) $\frac{dy}{dx} = -3$

3) $y = 3x^2 + 2$

- A) $\frac{dy}{dx} = 6x$
- B) $\frac{dy}{dx} = 6x^2 - 10$
- C) $\frac{dy}{dx} = 3x + 3$
- D) $\frac{dy}{dx} = 6x + 7$

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

- A) $f'(x) = -8x$
- B) $f'(x) = -8x - 8$
- C) $f'(x) = -4x - 1$
- D) $f'(x) = -8x^2 - 7$

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

- A) $f'(x) = -8x + 4$
- B) $f'(x) = -4x + 6$
- C) $f'(x) = -4x - 7$
- D) $f'(x) = -8x^2 + 4x + 2$

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

- A) $f'(x) = x + 13$
- B) $f'(x) = 2x^2 + 4x - 1$
- C) $f'(x) = 2x + 4$
- D) $f'(x) = 6x + 1$

$$7) y = \sqrt{-3x+5}$$

$$A) \frac{dy}{dx} = -\frac{3\sqrt{-3x+5}}{2}$$

$$B) \frac{dy}{dx} = \frac{9x-15}{2}$$

$$C) \frac{dy}{dx} = -\frac{3}{\sqrt{-3x+5}}$$

$$D) \frac{dy}{dx} = -\frac{3}{2\sqrt{-3x+5}}$$

$$8) f(x) = \sqrt{2x+4}$$

$$A) f'(x) = \frac{1}{\sqrt{2x+4}}$$

$$B) f'(x) = 2x+4$$

$$C) f'(x) = \sqrt{2x+4}$$

$$D) f'(x) = \frac{2}{\sqrt{2x+4}}$$

$$9) f(x) = -\frac{2}{2x-3}$$

$$A) f'(x) = \frac{2}{2x-3}$$

$$B) f'(x) = \frac{4}{4x^2-12x+9}$$

$$C) f'(x) = \frac{6}{4x^2-12x+9}$$

$$D) f'(x) = \frac{4x-8}{4x^2-12x+9}$$

$$10) y = -\frac{1}{x-2}$$

$$A) \frac{dy}{dx} = \frac{1}{x^2-4x+4}$$

$$B) \frac{dy}{dx} = \frac{x+4}{x^2-4x+4}$$

$$C) \frac{dy}{dx} = \frac{2}{x^2-4x+4}$$

$$D) \frac{dy}{dx} = \frac{x+5}{x^2-4x+4}$$

Calculus Practice: Definition of Derivative 1a

Use the definition of the derivative to find the derivative of each function with respect to x .

1) $f(x) = x + 3$

- *A) $f'(x) = 1$
- B) $f'(x) = 5$
- C) $f'(x) = x + 5$
- D) $f'(x) = x + 4$

2) $y = 5x - 1$

- A) $\frac{dy}{dx} = 5x - 7$
- B) $\frac{dy}{dx} = 5x - 5$
- *C) $\frac{dy}{dx} = 5$
- D) $\frac{dy}{dx} = -3$

3) $y = 3x^2 + 2$

- *A) $\frac{dy}{dx} = 6x$
- B) $\frac{dy}{dx} = 6x^2 - 10$
- C) $\frac{dy}{dx} = 3x + 3$
- D) $\frac{dy}{dx} = 6x + 7$

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

- *A) $f'(x) = -8x$
- B) $f'(x) = -8x - 8$
- C) $f'(x) = -4x - 1$
- D) $f'(x) = -8x^2 - 7$

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

- *A) $f'(x) = -8x + 4$
- B) $f'(x) = -4x + 6$
- C) $f'(x) = -4x - 7$
- D) $f'(x) = -8x^2 + 4x + 2$

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

- A) $f'(x) = x + 13$
- B) $f'(x) = 2x^2 + 4x - 1$
- *C) $f'(x) = 2x + 4$
- D) $f'(x) = 6x + 1$

$$7) y = \sqrt{-3x+5}$$

$$A) \frac{dy}{dx} = -\frac{3\sqrt{-3x+5}}{2}$$

$$B) \frac{dy}{dx} = \frac{9x-15}{2}$$

$$C) \frac{dy}{dx} = -\frac{3}{\sqrt{-3x+5}}$$

$$*D) \frac{dy}{dx} = -\frac{3}{2\sqrt{-3x+5}}$$

$$8) f(x) = \sqrt{2x+4}$$

$$*A) f'(x) = \frac{1}{\sqrt{2x+4}}$$

$$B) f'(x) = 2x+4$$

$$C) f'(x) = \sqrt{2x+4}$$

$$D) f'(x) = \frac{2}{\sqrt{2x+4}}$$

$$9) f(x) = -\frac{2}{2x-3}$$

$$A) f'(x) = \frac{2}{2x-3}$$

$$*B) f'(x) = \frac{4}{4x^2-12x+9}$$

$$C) f'(x) = \frac{6}{4x^2-12x+9}$$

$$D) f'(x) = \frac{4x-8}{4x^2-12x+9}$$

$$10) y = -\frac{1}{x-2}$$

$$*A) \frac{dy}{dx} = \frac{1}{x^2-4x+4}$$

$$B) \frac{dy}{dx} = \frac{x+4}{x^2-4x+4}$$

$$C) \frac{dy}{dx} = \frac{2}{x^2-4x+4}$$

$$D) \frac{dy}{dx} = \frac{x+5}{x^2-4x+4}$$