

$$1) \lim_{x \rightarrow 7} \frac{x^2 - 49}{x - 7} =$$

$$2) \lim_{x \rightarrow \infty} \frac{\sin x}{x} =$$

$$3) \text{Let } f(x) = 2x^5 + 6x^3 - 3x + 7$$

Find the first derivative.

$$4) \frac{d}{dx} (\cos x \sin x) =$$

$$5) \int_2^3 (6x^2 + 5) dx =$$

$$6) \frac{d}{dx} (\log^2(x)) =$$

$$7) \int_1^3 (-20x^3) dx =$$

$$8) \frac{d^2}{dx^2} (x^3 - x + 7) dx =$$

$$9) f(x) = 2x^5 - 3x$$

Find $f'(2)$

$$10) \int_0^2 (8x^3 + 9x^2 - 2x + 3) dx =$$