

# Worksheet 10: Basic Derivatives

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1. If you haven't already, write the general form for:

(a) The Power Rule

(b) The Constant Multiple Rule

(c) The Sum Rule

(d) The Difference Rule

2. Find the first and second derivative of:  $f(x) = 3x^2$ . Express them in both major notations.

3. Find the first and second derivative of:  $f(t) = 2e^t - 5$ . Express them in both major notations.

4. Find derivative; express it in both major notations.

(a)  $f(x) = \frac{x^2 + x + 1}{x}$

(b)  $f(p) = 3p - \sqrt{p}$

(c)  $B(a) = 5e^a + \sqrt{a} + 6a^2$

5. Find an equation of the tangent line to the curve  $y = x\sqrt{x}$  that is parallel to the line  $y - 1 = 3x$