

Practice! (Do the Odds at a minimum). You should probably do this on a separate sheet of paper. Duh.

FORM A:  $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$       FORM B:  $\lim_{x \rightarrow c} \frac{f(x) - f(c)}{x - c}$

For problems 1 & 2 (a) find  $f'(x)$  using Form A or B from above. (b) Find  $f'(3)$  using your result from part a. (c) Find  $f'(3)$  using Form A or B from above.

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

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

For problems 3 & 4 (a) find  $f'(x)$  using Form A. (b) Find  $f'(1)$  using your result from part a. (c) Find  $f'(1)$  using Form B

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

4)  $f(x) = \frac{1}{1 - x}$

For problems 5 & 6 (a) find  $f'(x)$  using either form. (b) Find  $f'(2)$  the long way. (c) Find  $f'(2)$  the short way.

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

6)  $f(x) = \sqrt{3-x}$

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