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AP Calc

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Do Now:

1. Given  $f(x) = 3x^2 - 2x + 1$ , find  $f'(x)$ .

2. Given  $g(x) = x^3 + 2x^2 + 3x - 1$ , find  $g'(x)$ .

3. Given  $f(x) = 2x$ , find  $f'(x)$ .

4. Given  $f(x) = 5$ , find  $f'(x)$ .

From our work over the past few days, we have found that:

$$\text{if } f(x) = x^2 + 4x + 9, \text{ then } f'(x) = 2x + 4$$

$$\text{if } f(x) = x^2 - 5x + 1, \text{ then } f'(x) = 2x - 5$$

$$\text{if } f(x) = 3x^2 - 4, \text{ then } f'(x) = 6x$$

$$\text{if } f(x) = 2x^2 - 5x^3, \text{ then } f'(x) = 4x - 15x^2$$

$$\text{if } f(x) = \frac{1}{x}, \text{ then } f'(x) = -\frac{1}{x^2}$$

Do you see a shortcut for finding  $f'(x)$ ? (Make sure your assumption works for all the previous examples above.)