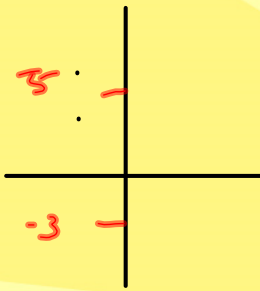


Warm Up:

Calculate the Derivatives of each of the following:



$$f(x) = x^2 \quad f'(x) = 2x$$

$$f(x) = x^2 + 5 \quad f'(x) = 2x$$

$$f(x) = x^2 - 3 \quad f'(x) = 2x$$

Explain WHY the relationship of these answers makes sense (hint think about the relationship between the graphs).

Jack: "Shape is the same so the slope is the same. It doesn't matter where it is up and down"

Brilliant!

Feb 24-1:03 PM

find the gradient of the tangent line at the given value of x .

1 $f(x) = 2x - 3; x = 2$

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

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

① $f(x) = 2x - 3$

$$f'(x) = 2$$

$$f'(2) = 2$$

② $f(x) = 3x^2 + 2x$

$$f'(x) = 6x + 2$$

$$f'(-3) = 6(-3) + 2 = -16$$

③ $f(x) = x^2 - x + 2$

$$f'(x) = 2x - 1$$

$$f'(1) = 2(1) - 1 = 1$$

Feb 28-1:39 PM

What if I wanted
the equation of a
tangent line?

- So far we have an x-value
and slope
- need y-value (sub x into original)
- write in point/slope form

$$y - y_1 = m(x - x_1)$$

Dec 22-9:26 AM