1. [–/6 Points] DETAILS SCALCET9 3.2.001.

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

Find the derivative by using the Product Rule.

$f'(x) =$

Find the derivative by multiplying first.

$f'(x) =$

Do your answers agree?

- Yes
- No

Need Help? Watch It

2. [–/1 Points] DETAILS SCALCET9 3.2.009.

Differentiate.

$$y = \frac{2x}{e^x}$$

$y' =$

Need Help? Watch It

3. [–/1 Points] DETAILS SCALCET9 3.XP.2.017.

Differentiate the function.

$$g(x) = \frac{1 + 4x}{7 - 2x}$$

$g'(x) =$

Need Help? Watch It

4. [–/1 Points] DETAILS SCALCET9 3.XP.2.018.

Differentiate the function.

$$y = \frac{\sqrt{x}}{6 + x}$$

$y' =$

5. [–/1 Points] DETAILS SCALCET9 3.2.030.

Differentiate.

$$f(x) = \frac{ax + b}{cx + d}$$

$f'(x) =$

6. [–/1 Points] DETAILS SCALCET9 3.XP.2.031.

Find an equation of the tangent line to the graph of the given function at the specified point.

$$f(x) = \frac{x^2 - 1}{x^2 + x + 1}, \quad (1, 0)$$

$y =$

7. [–/2 Points] DETAILS SCALCET9 3.XP.2.024.

Find $f'(x)$ and $f''(x)$.

$$f(x) = x^6 e^x$$

$f'(x) =$

$f''(x) =$

Need Help? Watch It

8. [–/1 Points] DETAILS SCALCET9 3.2.007.MI.

Differentiate.

$$f(x) = (7x^2 - 6x)e^x$$

$f'(x) =$

Need Help? Watch It Master It

9. [–/1 Points] DETAILS SCALCET9 3.2.010.

Differentiate.

$$y = \frac{e^x}{9 - e^x}$$

$y' =$

10. [–/1 Points] DETAILS SCALCET9 3.2.011.

Differentiate.

$$g(t) = \frac{3 - 8t}{6t + 5}$$

$g'(t) =$

11. [–/1 Points] **DETAILS** SCALCET9 3.2.013.

Differentiate.

$$f(t) = \frac{6t}{t^3 - t - 1}$$

$f'(t) =$

12. [–/1 Points] **DETAILS** SCALCET9 3.2.020.

Differentiate.

$$f(z) = (5 - e^z)(5z + e^z)$$

$f'(z) =$