

Name: _____

Key to Practice Test 2 for Test 2 (151I,L)

1. $y - \frac{1}{4} = \frac{-1}{16}(x - 4)$. (The main point is to show the work correctly.)

2. :

(a) $y' = x^2 e^x + 2x e^x$.

(b) $y' = 4x^3 \cos(x^4)$.

(c) $y' = -2e^x \sin(2x) + e^x \cos(2x)$.

3. $y' = -4x \sin(x^2) \cos(x^2)$.

4. $y' = \frac{(x^2 + 1)(x + 1)e^x - (xe^x)(2x)}{(x^2 + 1)^2}$.

5. $y' = x^{\frac{1}{x}} \left(\frac{1 - \ln x}{x^2} \right)$.

6. $y' = 6e^{2x} \sin^2(e^{2x}) \cos(e^{2x})$.

7. $y = \frac{2xe^{x^2}}{1 + e^{2x^2}}$.

8. $y + 1 = \frac{-1}{5}(x - 4)$.

9. $\frac{dS}{dt} = \frac{-20}{9}$. The shadow is moving down the wall at the rate of 20/9 feet per second.

10. $\frac{dV}{dt} = \frac{9\pi}{2}$. The gravel is falling from the conveyor belt at the rate of $9\pi/2$ cubic feet per minute.