

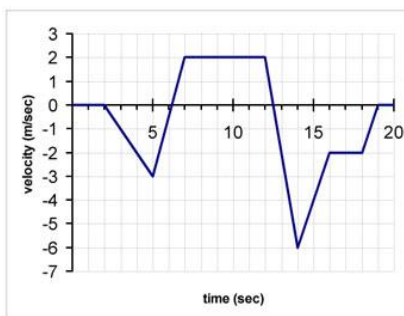
Name: _____ Date: _____ Pd: _____

Find the derivative of the function. **Simplify your answer completely.** **Must be turned in before leaving.**

1. $y = \frac{1}{x^8}$	2. $f(x) = (-2x^2 + \tan 2x)^3$
3. $f(x) = \sqrt{x} - 6\sqrt[3]{x}$ (Put over common denominator)	4. $y = \frac{x^3 + 3x + 2}{x^2 - 1}$
5. $f(t) = 3t^2 \sin 2t$	6. $f(x) = x^4 \left(1 - \frac{2x+1}{x^2} \right)$ (Simplify first!)
7. $f(t) = 5 \csc(2t)^2$	8. $f(t) = \sec^4(2t^2 - t)$
9. $f(x) = \sqrt{x-1} (x^2 + 4)^2$	

Find the slope of the tangent line at the given x-value. Use the information to write the equation of the tangent line for the given x value.

10) $f(x) = x^4 - 3x^2 + 2; \quad x = 2$

Use the following for #'s 11 - 1311. On what interval is the particle moving to the right?
(estimate/round as best possible)12. Describe the particle's acceleration at $t = 11$ seconds?
How do you know?13. Is the particle's speed increasing or decreasing at $t = 13$ seconds? Justify your answer by incorporating the relationship between velocity, acceleration, and speed.