Calculus Name_____

Limit definition Derivatives and Tangent Lines

Date_____

Use the limit definition of the derivative to (part A) find the slope of the tangent line and (part B) the equation of the tangent line. In part B your answer should be in slope-intercept form.

1) $y = x^3 - 3x^2 + 1$ at $x = -1$

2) $y = 2x - 2$ at $x = 0$

3) $y = -x^2 - 6x - 6$ at $(-3, 3)$

4) $y = \dfrac{2}{x-2}$ at $(1, -2)$

5) $y = -(2x-2)^2$ at $x = -2$

6) $y = -6x - 9$ at $x = -1$

7) $y = 2\tan(x)$ at $(0, 0)$

8) $y = -\cos(x)$ at $(0, -1)$