Practice Problems for Math 102 – Tangent Line Equation

Spring 2010

Find y' and the equation of the tangent line at x = +1 for each of the following:

1. $y = 4x^3 + 6$
2. $y = -13\, x^{3/2} + 5$
3. $y = 1 + x + x^2/2 + x^3/4 - 10x^{4/5}$
4. $y = 15 - 4x^5$
5. $y = (x + 3)^2$

Answers:

	y'	Tangent Line Equation
1.	$y' = 12x^2$	$y - 10 = 12(x-1)$
2.	$y' = -19.5x^{1/2}$	$y + 8 = -19.5(x-1)$
3.	$y' = 1 + x + .75x^2 - 8x^{-1/5}$	$y + 7.25 = -5.25(x-1)$
4.	$y' = -20x^4$	$y - 11 = -20(x-1)$
5.	$y' = 2x + 6$	$y - 16 = 8(x-1)$