NAME: _____ Period: ____

v. 3

SHEET #322:

DERIVATIVES OF POLYNOMIALS AND EXPONENTIALS.

Given these rules:

→ $\frac{d}{dx}(b) = 0$ $\frac{d}{dx}(mx+b) = m$

$\frac{d}{dx}(x^n) = n \cdot x^{n-1}$

→ $\frac{d}{dx}(e^x) = e^x$ $\frac{d}{dx}(a^x) = (\ln a) \cdot a^x$.

A. FILL OUT

x	0	1	e	e^2	$2x$	$x+2$
$\ln(x)$						

B. Find:

1. $\frac{d}{dx}(4x^3) =$

2. $\frac{d}{dx}(3x^5 + 4x - 5) =$

3. $\frac{d}{dx}\left(\frac{1}{x^4}\right) =$

4. $\frac{d}{dx}(4e^x) =$

5. $\frac{d}{dx}(3^x) =$

6. $\frac{d}{dx}(\sqrt{x}) =$

7. $\frac{d}{dx}(4^x + x^4) =$

EXTRA:

8. $\frac{d}{dx}(e^{x+1}) =$

9. $\frac{d}{dx}(e^{2x}) =$