October 7

Find the Derivative of each function:

$f(x) = (4x + 7)^5$ $f'(x) = 5(4x+7)^4(4)$

$g(x) = \cos(x^2 - 9x)$ $g'(x) = -\sin(x^2-9x)(2x-9)$

$h(x) = \ln(8x^3 + 4)$ $h'(x) = \frac{1}{8x^3+4}(24x^2)$

October 7

Students will verbally explain how to use the derivative to give characteristics of a function

(using the words:
increasing, decreasing, positive, negative, zero...)

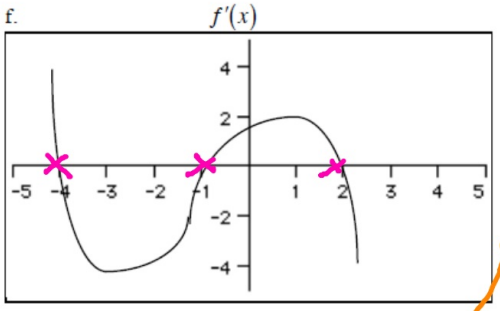
B – backwards, from f' to f (f'')

Z – zeros – find & label where $f' = 0$ or is undef (critical points)

A – above – label where f' is above the x-axis (f is increasing)

B – below – label where f' is below the x-axis (f is decreasing)

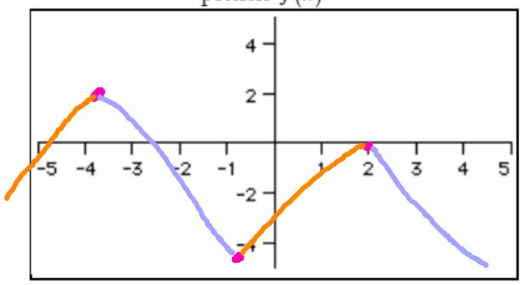
BZAB



Crit pts		-4		-1		2	
sign f'		+		−		+	−
behav. f		inc		dec		inc	dec

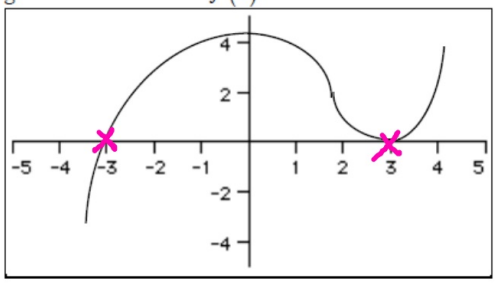
behavior of f

possible $f(x)$



BZAB

g. $f'(x)$



CP		-3		3	
sign f'		−	+	+	
behav f		dec	inc	inc	

possible $f(x)$