

AB Calculus
Day 24 Warm Up

Name _____

Date _____

- If $f(x) = -x^2 + 12$, find an equation of the tangent to the curve passing through the point $(4, 0)$.
a) $y = -8x + 32$ b) $y = -8x - 32$ c) $y = -4x$ d) $y = -4x + 16$ e) $y = -2x - 32$

- The point $(6, 2)$ lies on the graph of $f(x) = \frac{x-4}{x-5}$. Find the slope of a line tangent to the graph at that point.
a) $-\frac{1}{36}$ b) -1 c) 1 d) $-\frac{1}{9}$ e) 2

- If $f(x) = x \cos x$, determine the equation of the tangent line to the graph when $x = \pi$.
a) $y = 0$ b) $y + 1 = -(x - \pi)$ c) $y + 1 = x - \pi$
d) $y = x$ e) $y = -x$

- If $f(x) = \pi - \sin x + (\pi x)$, then $f'(\pi) =$
a) $\frac{\pi}{2}$ b) $\frac{4}{\pi}$ c) $\pi + 1$ d) $\pi - 1$ e) 2π

Matching Drill

	A.	B.	C.
1. $\frac{1}{\sqrt[4]{x^3}} =$	$x^{\frac{3}{4}}$	$x^{\frac{4}{3}}$	$x^{-\frac{4}{3}}$
2. $\ln [x(x+1)] =$	$\ln(x + x+1)$	$\ln(x) + \ln(x+1)$	$\ln x - \ln(x+1)$
3. $\frac{d}{dx} [x^2 f] =$	$\frac{x^2 f' + f(2x)}{2}$	$x^2 f' + 2xf$	$\frac{x^2 f' - 2xf}{[x^2 f(x)]^2}$
4. $\lim_{x \rightarrow \infty} \frac{x^2}{2^x} =$	0	∞	$-\infty$
5. $\frac{d}{dx} [\sec x] =$	$\sec^2 x$	$\sec x \tan x$	$\csc^2 x$
6. $\frac{d}{dx} \left[\frac{1}{x} \right] =$	x^{-2}	1	$-\frac{1}{x^2}$
7. $\sin \frac{5\pi}{3} =$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$
8. $(4\sqrt{3})^2 =$	24	48	72
9. $\frac{x-5}{3x^2-19x+20} =$	$\frac{1}{(3x-4)^{-1}}$	$(3x-4)^{-1}$	$(3x-4)^{-2}$