

MATH 220: CALCULUS I
WORKSHEET 8
FEBRUARY 7, 2013

1. Let $f(x) = 2x + 1$ when $x \neq 1$. Is f continuous at $x = 1$?
2. (!) Find an equation of the tangent line to the curve $y = 2\sqrt{x+1}$ at the point $(3, 4)$.
Graph both the curve and the tangent line.
3. What is the slope of the line tangent to $y = \sin(x)$ at $x = 1$?

4. Given $f(x) = x^{-3}$, find $f'(a)$.

5. Graph $f(x) = \cos(x)$. From its graph, sketch a graph of $f'(x)$.
Can you guess a formula for $f'(x)$?

6. True or False: A function that is continuous at a point a must also be differentiable at a .

7. True or False: A function that is differentiable at a point a must also be continuous at a .