

## Trig Differentiation Practice

1. Take the derivative of the following functions:

(a)  $f(x) = \tan(2x)$

(b)  $f(x) = \cos(x) \sin(x)$

(c)  $f(x) = \sqrt{\cos(4x)}$

(d)  $f(x) = e^{-\cos(2x)}$

(e)  $f(x) = \sin^2 x$

(f)  $f(x) = \sin(x^2)$

2. Take the derivative of  $f(x) = \sin(2x)$ . Sketch  $f(x)$  and  $f'(x)$ . Discuss.

3. Take the derivative of  $g(x) = \sin(x^2)$ . Sketch  $g(x)$  and  $g'(x)$ . Discuss.