

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 $f'(x)$. Why do the graphs have the shape that they do?

3. Take the derivative of $g(x) = \sin(x^2)$. Sketch $g(x)$ and $g'(x)$. Why do the graphs have the shape that they do?