

## Formative Assessment #31 - Derivatives of Trigonometric Functions

C7.2: I can determine the derivative of a trigonometric function.

Answer on your own paper.

1. Differentiate. Do not simplify.

a)  $\frac{d}{dx}(\sin x + 8 \cos x)$

b)  $f(x) = \tan(x^5)$

c)  $f(x) = \sec x \cdot \cos(3x^2 + 7x)$

d)  $y = \frac{\cot x}{x^3 + 1}$  Use the Quotient Rule

e)  $f(x) = \frac{1}{2} \sin^4 x$

f)  $y = \csc(3\pi x^7)$

g)  $h(x) = \sqrt{\sin(x^5 - 3x)}$

2. If  $x \cdot \cos y + y \cdot \cos x = xy$ , use implicit differentiation to find  $y'$ .