

Station 1

Find the derivative using two methods if $g(t) = \frac{t^2-1}{1+t}$.

Station 2

At what x-value is the slope of the function $f(x) = \frac{2x^3-3x^2}{6}$ equal to 6?

Station 3

Find the second derivative, $f''(x)$, when $f(x) = x - x \cos x$

Station 4

Find the derivative using two methods if $f(x) = x^{-2} - 4x^{-3}$.

Station 5

Let $g(x) = x^{\frac{3}{5}}$.

At what x-values, if any, is $g(x)$:

- a. Differentiable?
- b. Continuous but not differentiable?
- c. Neither continuous nor differentiable?

Station 6

Let $f(x) = \frac{\cos(x)}{\cos(x) - 2}$.

When, if ever, is $f'(x) = 0$?

Station 7

Write an equation for the line tangent to $h(x)$ at $x = 1$ if $h(x) = \frac{x}{e} + \frac{e}{x}$.

Station 8

Let $g(x)$ and $g'(x)$ have the following values:

x	g(x)	g'(x)
0	9	-2
1	-3	4

Find the first derivative of $\frac{g(x)}{x^2+2}$ at $x = 0$.