

Name: _____

The Derivative

Exercise 1: For $f(x) = \sqrt{x}$. Find $f'(x)$ using the definition of derivative.

Exercise 2: Starting from the definition of derivatives find $\frac{dy}{dx}$:

1) $y = 2$

2) $y = 3x$

3) $y = 4x - 3$

4) $y = x^2 - x$

5) $y = 3x^2 - \sqrt{2}$

6) $y = \sqrt{2}x - 1$

Exercise 3: Find the slope of the tangent to the graph of the function at the given point

1) $f(x) = x^2 - 2$ (1,1)

2) $f(x) = x^2 - x$ (0,1)

3) $f(x) = x^3$ (2,3)

4) $f(x) = x^2 - x + 1$ (-1,1)