Math 4CST Function Notation Name: Key

1. Given the function $f(x) = 3x + 5$

a) Evaluate $f(0)$

$f(0) = 3(0) + 5$
$= 5$

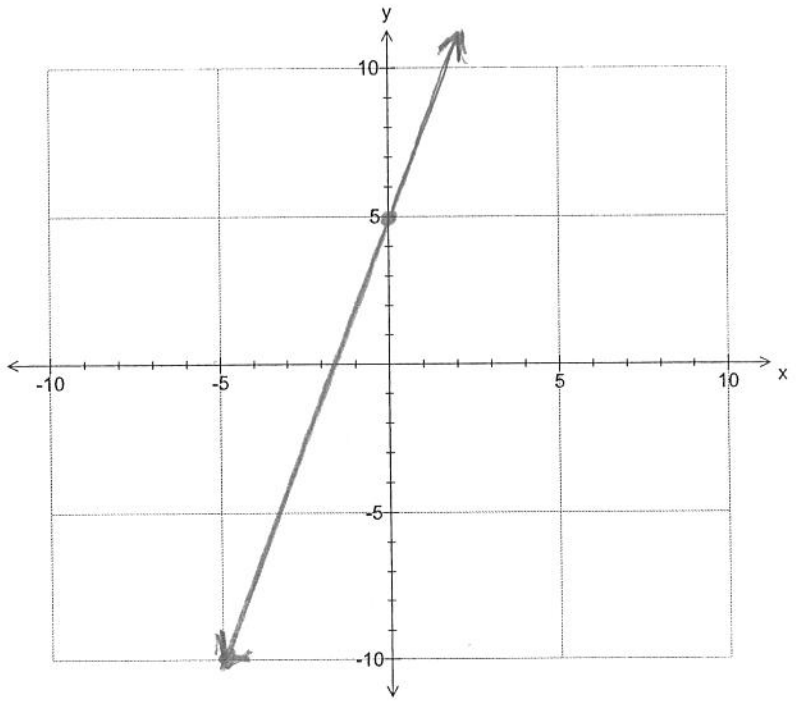
b) Evaluate $f(2)$

$f(2) = 3(2) + 5$
$= 6 + 5$
$= 11$

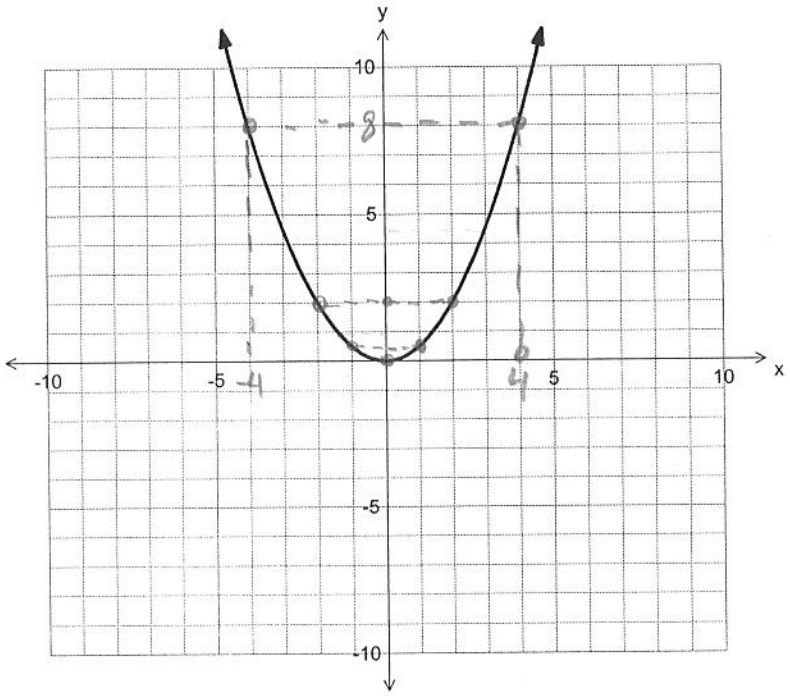
c) Evaluate $f(-5)$

$f(-5) = 3(-5) + 5$
$= -15 + 5$
$= -10$

d) Knowing that $f(x)$ is a linear function, use your results to parts (a), (b) and (c) to graph the function below. Be sure to include arrows at each end!



2. Given the function $f(x) = 0.5x^2$ and its graph shown below:



a) Using the graph, approximate $f(0), f(1), f(-1), f(2), f(-2)$

$f(0) = 0$
$f(1) = 0.5$
$f(-1) = 0.5$
$f(2) = 2$
$f(-2) = 2$

b) Use the above rule to check your answers to part (a)

$f(0) = 0.5(0)^2 = 0$

$f(1) = 0.5(1)^2 = 0.5$

$f(-1) = 0.5(-1)^2 = 0.5$

$f(2) = 0.5(2)^2 = 2$

$f(-2) = 0.5(-2)^2 = 2$

c) If the value of $f(x)$ is 8, what are the possible **values** of x? Use both the graph and the rule given above to check that you are correct.

Graph: $x = -4$ or $x = 4$

Rule: $f(x) = 8$

$\frac{0.5x^2}{0.5} = \frac{8}{0.5}$

$\sqrt{x^2} = \sqrt{16}$

$x = \pm 4 \Rightarrow x = -4$ or $x = 4$