Name: KEY

Section 3.3 – Applications and Function Notation

Find the Slope (Rate of Change – Slope with Units) of the following scenarios

I bought a used car (2 years old) for \$12 000, and I sold it 3 years later for \$5600. Considering a steady rate of change. What is the depreciation rate of the car per year?

(2, 12000) (5, 5600)

$\frac{5600 - 12000}{5 - 2} = \frac{-6400}{3}$

$-2133.33 / yr$

My odometer read $112345km$ and I had a full tank of gas. When my tank was empty, $30L$ later, my odometer read $112847km$. How far can I travel per litre?

(0, 112345) (30, 112847)

$\frac{112847 - 112345}{30 - 0}$

$\frac{502}{30} = 16.7 km/L$

Given the function: $f(x) = 3x + 5$.
What is $f(3)$.

↑ sub for x

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

$= 9 + 5$

$= 14$

Given the function: $f(x) = 2x^2 + 5x - 4$
What is $f(-3)$.

$2(-3)^2 + 5(-3) - 4$

$2(9) + 5(-3) - 4$

$18 - 15 - 4$

-1

Given the function: $f(x) = 3x^3 - 2x^2 + 4x - 5$
What is $f(k)$.

$f(k) = 3k^3 - 2k^2 + 4k - 5$

Given the function: $f(x) = 5x + 4$ ← this is f(x)
What is $f(x + h) - f(x)$.

$f(x+h) = 5(x+h) + 4$

$5(x+h) + 4 - (5x+4)$

$5x + 5h + 4 - 5x - 4 \rightarrow 5h$