

IM2 Lesson 1: Introduction to Functions | Unit 1 – Basics of Function

A. Lesson Context

BIG PICTURE of this UNIT:	<ul style="list-style-type: none"> • What is meant by the term FUNCTIONS and how do we work with them? • mastery with working with basics & applications of linear functions • mastery with working with basics & applications of linear systems • understanding basics of function concepts and apply them to lines & linear systems 		
CONTEXT of this LESSON:	Where we've been In Grade 8, you studied linear RELATIONS & you've heard the terms domain and range	Where we are What do we mean by the term "functions" and how do linear relations from Grade 8 fit into this bigger understanding?	Where we are heading Mastery of working with multiple representations of $f(x) = mx + b$

B. Lesson Objectives

- Work with number patterns to revisit the "rule of four" or multiple representations
- Introduce fundamental concepts related to Functions → relations, functions, domain, range, notations
- Review basic algebra about linear relations

C. Fast Five (Skills Review Focus)

a. Solve $3x + 5 = 15 - 2x$

$$5x = 10$$

$$\boxed{x = 2}$$

b. Solve $3(2-x) = -(x-2)$

$$6 - 3x = -x + 2$$

$$4 = 2x$$

$$\boxed{2 = x}$$

c. Evaluate $4^{-2} - 2^{-3}$

$$\frac{1}{16} - \frac{1}{8} = \boxed{-\frac{1}{16}}$$

d. Evaluate $(x-4)(3-2x)$ when $x=2$

$$(2-4)(3-2(2))$$

$$-2(-1) = \boxed{2}$$

e. Find the slope of the line through

$A(2,5)$ and $B(6,-3)$.

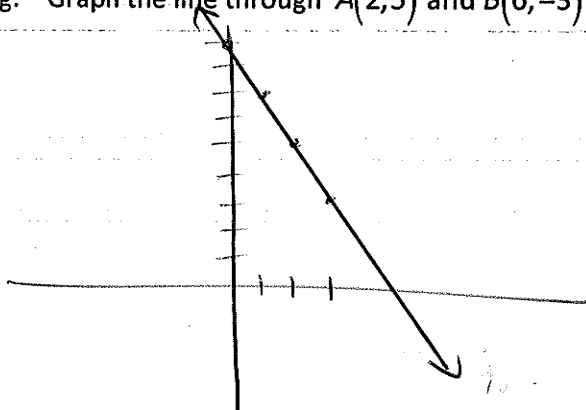
$$\frac{5+3}{2-6} = \frac{8}{-4} = \boxed{-2}$$

f. Find the equation of the line through

$A(2,5)$ and $B(6,-3)$.

$$\boxed{y-5 = -2(x-2) \text{ or } y = -2x + 9}$$

g. Graph the line through $A(2,5)$ and $B(6,-3)$.



h. Determine the slope of a line perpendicular to line AB.

$$\frac{1}{2}$$