Your Name October 16th 2025

## Math 115E Activity 12

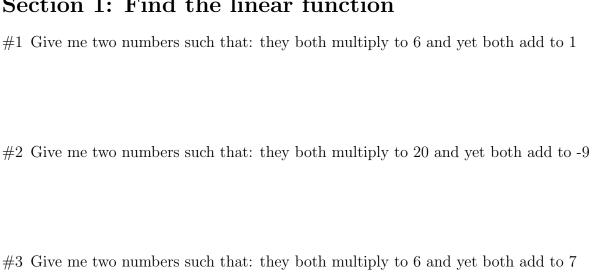
Chapter 4 Section 5 Determining the Linear Function

**Definition.** A linear function can be expressed by f(x) = mx + b, where x is the input, m is the slope, and b is the y intercept of f(x). This is known as slope-intercept form

Helpful steps. There are two slightly different methods to find the linear function

- Use point-slope form  $(y y_0) = m(x x_0)$ : Plug in a point  $(x_0, y_0)$  and m
- Use slope-intercept form y = mx + b: Plug in a point (x, y) then solve for b

## Section 1: Find the linear function



- #4 Give me two numbers such that: they both multiply to -80 and yet both add to -2
- #5 Give me two numbers such that: they both multiply to -4 and yet both add to 0
- #6 Give me two numbers such that: they both multiply to -6 and yet both add to 1

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#7 Give me two numbers such that: they both multiply to -6 and yet both add to -1

## Math 115E Activity 12

Chapter 4 Section 5
Determining the Linear Function

**Definition.** An inequality looks just like an equation, except that in place of the equal sign, we have one of the symbols  $<,>,\leq,\geq$ . Giving us a range of values not just one Example:  $4x-3=1 \to x=1$  compared to  $4x-3\geq 1 \to x\geq 1$ 

Helpful steps. There are two slightly different methods to find the linear function

- To solve: Isolate x terms to one side, then simplify both sides
- If you divide both sides by a negitive number, then switch the inequality signs Example: We start with leq and becomes  $\geq$  and then > becomes < and vise versa

## Section 2: Solve the Expressions

$$#1 2x + 3 = 5$$

#5 
$$4(x-5) + 2 \ge 2 + 2x$$
 #9  $\frac{4}{3}x - \frac{1}{5} = \frac{5}{6}x$ 

$$\#9 \ \frac{4}{3}x - \frac{1}{5} = \frac{5}{6}x$$

$$\#2 \ 4x - 3 \ge 9$$

#6 
$$4 - \frac{4}{5}x = 4$$

#10 
$$5x + 1 = 5x - x + 1$$

$$\#3 \ 5x - 1 < x + 8$$

$$\#7 \ \frac{3}{2}x - 6 \le \frac{4}{5} + 8$$

#11 
$$6x - 4 < 6x - 5$$

$$\#4 \frac{5}{6}x - 12 = 4$$

#8 
$$-(-x-4) = \frac{1}{2}(x-2)$$
 #12  $5x-2 > 5x-2$ 

$$\#12 \ 5x - 2 > 5x - 2$$