

Math 7H - Unit 2a

Day 6 - Linear Expressions Application

Lesson Objectives:

- I can write linear expressions from story contexts.
- I can write grade-level story contexts using linear expressions.

To translate a verbal phrase into an algebraic expression, the first step is to define a variable. When you define a variable, you choose a variable to represent an unknown quantity.

Marisa wants to buy a DVD player that costs \$150. She already saved \$25 and plans to save an additional \$10 each week. Write an expression that represents the total amount of money Marisa has saved after any number of weeks.

Define the variable: $x = \text{the \# of weeks Marisa saved}$

Linear expression: $10x + 25$

Leah has already read 20 pages of a book. She plans to read 5 pages each day from now on. Write an expression that represents the total number of pages she will have read in d days.

Define the variable: $d = \text{\# of days Leah reads}$

Linear expression: $5d + 20$

A rectangle has side lengths $(2x - 5)$ meters and $(2x + 6)$ meters. Write a linear expression in simplest form to represent the perimeter.

Define the variable: $x = \text{a number}$

Linear expression: $P = (2x - 5) + (2x + 6) + (2x - 5) + (2x + 6)$

$$\begin{aligned} & \text{Diagram of a rectangle with side lengths } 2x-5 \text{ and } 2x+6. \\ & P = 2l + 2w \\ & P = 2(2x-5) + 2(2x+6) \\ & P = 2(4x-1) \\ & P = 8x-2 \end{aligned}$$

$$\begin{aligned} & P = (2x-5) + (2x+6) + (2x-5) + (2x+6) \\ & = 8x+2 \\ & P = 2(2x-5) + 2(2x+6) \\ & = 4x-10 + 4x+12 \\ & = 8x+2 \\ & P = 2(2x-5+2x+6) \\ & = 2(4x+1) \\ & = 8x+2 \text{ meters} \end{aligned}$$

The number of customers in a store on the first day is represented by $(6x - 3)$. The number of customers on the second day is represented by $(x - 1)$. Write an expression to find how many more customers visited the store on the first day.

Define the variable: $x = \text{a number}$

Linear expression: $(6x - 3) + (x - 1)$

$$\begin{array}{r} 6x-3 \\ + \quad -x-1 \\ \hline 5x-2 \end{array}$$

Story Context

a.

b. $x - 3$

c. $4 + 6x$

d.

e.

f. $10(x - 1)$

Homework

Linear Expressions Application WKS

* Individual Think Time *



What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

