Name _____ Date _____

Writing Equations

1. Tina wants to sell 30 items *[total]* for the fundraiser. She knows that she has five ✳ days left to sell. Write an equation to find how many items she must sell per day in order to reach her goal.
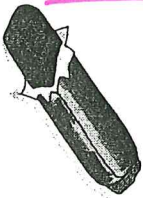
- Define Variable: ___ x = # of items ___
- Equation: ___ 5x = 30 ___

$$\frac{5x}{5} = \frac{30}{5}$$ ⟶ x = 6 items

2. Jerome has $28 *[total]* in his pocket. He wants to buy as many candy bars as he can for $1.75 each. ✳ Write an equation to show how many candy bars he can buy.

- Define Variable: ___ x = # of candy bars ___
- Equation: ___ 1.75 x = 28 ___

$$\frac{1.75x}{1.75} = \frac{28}{1.75}$$ x = 16 candy bars

3. George and his two friends each purchased popcorn at the movies. Each popcorn costs $6.25. What was the total amount spent on popcorn?   *[splitting cost evenly: division]*
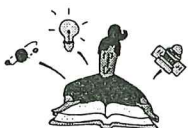
- Define Variable: ___ x = total cost of popcorn ___
- Equation: ___ $\frac{x}{3} = 6.25$ ___

$$3 \cdot \frac{x}{3} = 6.25 \cdot 3$$ x = 18.75 total cost

4. Daylena needs to finish reading <u>The Giver</u> for her book report for Mr. Waggoner. She still has 112 pages. She knows that she can read 20 pages each night before bed. Write an equation to show how many nights it will take Daylena to finish her book.

- Define Variable: _____
- Equation: _____

Writing Equations

1. Breon wants to buy a new sound system for $145. He has already saved $65. He gets $20 for each lawn that he mows. Write an equation to show how many lawns Breon must mow in order to have enough money for his new sound system.

*(annotations: total, +, each *)*

Step 1: Define your variable __x = # of lawns__

Step 2: Place the total or what you are trying to get on the right side of the equals sign: __145__

Step 3: Figure out what goes on the left side of the equals sign (the other numbers in the problem with the variable). __$20x + 65 = 145$__

2. Antonio bought Mrs. Becker six boxes of chocolate. He used a coupon that took $1.00 off his total bill. His total bill came to $23.00. Write an equation to show how much each box of chocolate cost.

*(annotations: –, each *)*

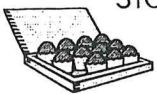Step 1: Define your variable __x = cost of a box of chocolate__

Step 2: Place the total or what you are trying to get on the right side of the equals sign: __23__

Step 3: Figure out what goes on the left side of the equals sign (the other numbers in the problem with the variable). __$6x - 1 = 23$__

3. Brittany, her mom, and her two siblings went to a movie. The cost of her mother's ticket was $6. Brittany's ticket cost the same as her two siblings (under 16 rate). The total for all of them to watch the movie was $15. Write an equation to show the cost of each of the under 16 rate tickets.

*(annotation: each *)*

Step 1: Define your variable __x = cost of each ticket under 16__

Step 2: Place the total or what you are trying to get on the right side of the equals sign: __15__

Step 3: Figure out what goes on the left side of the equals sign (the other numbers in the problem with the variable). __$3x + 6 = 15$__

4. Erin went to the amusement park and paid $7.00 just to get in. She also bought six cotton candies for herself and her five friends. She spent $31.00 total at the amusement park. Write an equation to find the cost of each cotton candy.

Step 1: Define your variable __x = cost of each cotton candy__

Step 2: Place the total or what you are trying to get on the right side of the equals sign: __31__

Step 3: Figure out what goes on the left side of the equals sign (the other numbers in the problem with the variable). __$7 + 6x = 31$__

WRITING EQUATIONS

ooooooooooooooooooo ooooooooooooooooo ooo

Match each expression to the situation it represents.

$20x + 40$ $x + (x + 40) + 20$ $40x$ $x + 20$

Jaime worked 40 times as long as Xandra on the group project.

initial amt.

Xavier had $40 in his bank account. He saved + an additional $20 a month.

Mylia scored 20 points + higher than Xya on the algebra final.

The music department had drums, flutes, and xylophones. There were 20 drums and 40 more + flutes than xylophones.

· look for key words

How did you figure out which expression matched each situation?

Think

Pair

Share

Let Statements

Why?

Definition

A "let statement" defines the variable so people understand what the variable stands for.

EXAMPLE

Let x = the # of xylophones

Practice

Write a let statement for each of the situations below.

Situation	Expression	Let Statement
The height of a rectangle is <u>twice</u> its width. Write an expression to represent the perimeter.	2(X + 2x) 2x + 4x	X = width
Dakota beads keychains. She spent $50 on supplies and sells them for $30 apiece. Write an expression to represent her profit.	30x – 50	X = # of keychains
Shaylee makes $3 per hour more than Dustin. Write an expression to represent Shaylee's wage.	x + 3	X = wages
Kaylissa is staining a shelf. The varnish takes three times longer than the stain to dry. Write an expression to represent the time it takes the varnish to dry.	3x	X = time it takes to dry

Write an expression and let statements for the situations below.

Situation	Expression	Let Statement
Waylon is measuring the growth of a sapling. It is 18 inches tall when he starts taking measurements and grows 3 inches per week. Write an expression to represent the height of the tree.		
Mario is cutting wood. He can cut 50 bundles an hour. Write an expression to represent the number of bundles he cuts.		