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**TODAY'S DATE:** 10/28/19

**Do Now:** Translate the following. Use *x* for any unknown.

**Homework**

REVIEW SHEET

#1a, 1d, 4c, 4e, 4g, 5, 6

1) An admission fee of $10 plus an additional $2 per game. $2x + 10$   Let x = # of games

2) The product of five and a number plus half the number *x*. $5x + \frac{1}{2}x$   Let x = a number

3) Twice the number of sports fans diminished by 5. $2x - 5$   Let x = # of sport fans.

**TEST on WEDNESDAY!**

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| Addition | Subtraction |
|---|---|
| · Sum | *difference |
| · combined | · minus |
| · altogether | · fewer    *Less Than |
| · plus | · decrease    5 less than 10 → 10 − 5 |
| · Product    Half ($\frac{1}{2}x$) | Quotient |
| ) PER    Twice (2x) | Half ($\frac{x}{2}$) |
| · Each    Triple (x3) | · Split up |
| · times | |
| Multiplication | Division |

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**Aim:** *I can write an equation to model a real-world situation AND solve it!*

**Guided Practice**: An equation may be used to solve real-world problems. We use a variable to represent an unknown value. In order to use algebra for word problems, you need to look for key words that represent adding, subtracting, multiplying, and dividing. Begin all word problems by defining your variables. State clearly what you want each symbol to represent. This is called a **Let statement**

**Example: If 12 is subtracted from Daniel's age the result is 32. How old is Daniel?**

Let x = Daniel's current age   <-- Let statement

$x - 12 = 32$
$+12 \quad +12$   Check
$x = 44$   44 − 12
$32 = 32$ ✓

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**Exercise 1**: Five times a number increased by seven is equal to -33. Find the number.

Let x = a number

$5x + 7 = -33$
$\quad -7 \quad -7$
$5x = -40$
$\overline{5} \quad \overline{5}$
$x = -8$

The number is −8.

**Helpful Hints**:

Step 1- Write a let statement ✓

Step 2- Set up the equation from the word problem ✓

Step 3- Solve the equation for the variable

Step 4- check your solution by using the **word problem.**

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**Exercise 2**: Half of Ms. Moser's age increased by 5.5 is equivalent to 20. What is Ms. Moser's age?

Let x = age

$\frac{1}{2}x + 5.5 = 20$
$\quad -5.5 \quad -5.5$
$(2)\frac{1}{2}x = 14.5(2)$
$x = 29$

Ms. Moser is 29 years old.

**Helpful Hints**:

Step 1- Write a let statement

Step 2- Set up the equation from the word problem

Step 3- Solve the equation for the variable

Step 4- check your solution by using the **word problem.**

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**Exercise 3**: Jamie attends a carnival. The admission fee is $6 and it is an additional $2 per ride ticket. Write an equation that Jamie can use to determine the number of rides (r) she can buy if she has $40.

Let r = # of rides.

$2r + 6 = 40$
$\quad -6 \quad -6$
$\frac{2r}{2} = \frac{34}{2}$
$r = 17$

Jamie can buy 17 ride tickets.

**Problem Set**: Solve the following word problem questions. Be sure to include a **Let** statement, equation, solution, and show a check for your solution. Remember to **check by using the word problem**.

1. You buy some roses for 14.70 and 9 carnations. Your total cost is $40.08. How much does each carnation cost?

2. Optimum charges $64.95 per month and $4.95 per On Demand movie. If Ms. Moser's Optimum bill for one month was $84.75 write an equation that can be used to determine the number of On Demand movies, m, she rented.

Let m = # of movies.    $4.95m + 64.95 = 84.75$

3. Green's Gym charges a one-time fee of $50 plus $30 per session for a personal trainer. Planet Fitness charges a yearly fee of $250 plus $10 for each session with a trainer. For how many sessions is the cost of the two plans the same?