**4.1: Introduction to Word Problems**

**Translating English into Math**

How do you translate English into math expressions?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Addition** | **Subtraction** | **Multiplication** | **Division** | **Equals** |
|  |  |  |  |  |

Note: Be careful with the **ORDER** of the expression when **SUBTRACTING or DIVISION**. It is often a good idea to check by substituting with numbers to check your work.

Ex 1) Write the following phrases as mathematical expressions or equations. Use x as the variable where a number is unknown.

1. A number multiplied by 6. ­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Five less than a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Four times the difference of a number and 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Four times the sum of a number and 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Twice a number plus three is eleven. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. A quarter of a number is equals eight. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Sum of 3 consecutive integers is 93. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Three times a number is equivalent to twice that number increase by two. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Steps to solve a word problem:**

Step 1:

• Define your variables using **LET statements.**

• Determine what quantity you want to solve for and let the variable represent this quantity.

• If there is more than one qua ntity to solve for, then use the information in the question to create expressions to represent the second quantity using the

 same variable.

**\*\*NOTE:** Always let the variable represent the **SMALLER quantity.**

Step 2: Create **an equation.** Use the information in the question to create an equation. This is known

as your algebraic model.

Step 3: **Solve** the equation. Show all your work. Be sure to solve for all the unknown quantities in the

question.

Step 4: **Check** your answer. Use a LS/RS T-chart proof to do this. Include a LS/RS summary statement

as part of your proof.

Step 5: Write **a conclusion.** Write a final statement in sentence form that summarizes the answer to

the question. Be sure to include appropriate **units.**

Ex. 2) Twelve times a number, increase by 8, is eighty. Find the number

Ex. 3) Donya cannot decide whether to buy a DVD player or a CD player for her birthday. A DVD player costs $75 more than a CD player. Together, they cost $725. How much does each cost?