

1.3: Write Algebraic Expressions

Goals: *Translate verbal phrases into algebraic expressions by identifying key words and phrases

*Use and find unit rates

*REMEMBER THAT AN EXRESSION....

Key Words

Addition	Subtraction
Multiplication	Division

Translate the following verbal phrases into algebraic expressions:

Ex: 5 more than x

Ex: The product of 3 and a number y

Ex: The difference of 7 and b

Ex: 4 less a number z

Ex: t less than 40

Grouping:

Ex: 4 more than the quantity 6 times a number n

Ex: The difference of 3 and the product of 5 and x

Ex: 7 less than twice a number b

Ex: The difference of 22 and the square of a number m

Ex: The quotient when the quantity 10 plus a number x is divided by 2

Ex: 8 times the sum of 4 and a number.

Ex: 12 decreased by a number x

Ex: The quotient of the square of a number m and 5

Ex: A piece of ribbon l feet long is cut from a ribbon 8 feet long. Write an expression for the length, in feet, of the remaining piece. (Draw a picture to help)



Ex: You work with 5 other people at an ice cream stand. All the workers put their tips in a jar and share their tips equally at the end of the day. Write an expression to represent the total amount of money each worker will receive in tips at the end of the day.



Ex: You and 4 friends meet to have dinner at a restaurant. Everyone decides to order the nightly special. Write an expression to represent the total cost of the meal.

Rates and Unit Rates:

Rate:

Unit Rate:

Finding a unit rate:

Ex: A car travels 110 miles in 2 hours

Important Factors

- How do you set up this rate? Why?

What if the sentence read:

“It takes a car 2 hours to travel 110 miles”

Would you change the way you set up the rate?

2 questions to help you decide how to set it up:

- How many _____ does it take to go 1 _____?

Or

- How many _____ can you go in 1 _____?

*Since a UNIT RATE has a denominator of 1, then the denominator is the quantity with the 1 attached.

Use the given information to find a unit rate (round to the nearest cent):

Ex: A 16-ounce box of cereal costs \$2.99

Ex: 9 gallons of gas costs \$29.70

Ex: Your basic monthly charge for cell-phone service is \$30, which includes the first 300 minutes. You pay a fee for each extra minute you use. One month you paid \$3.75 for 15 extra minutes.

- a) Write an expression to represent the total cost of your monthly bill for any number of extra minutes.

- b) Find your total bill if you use 22 extra minutes.

What do you need to know before you can figure out your new monthly bill?

How can you find it?

Ex: You have a membership at a local ski club. The membership costs you \$40 per month, which includes 10 lift tickets. You must pay a fee for each lift ticket after the tenth one. Two months ago you paid \$13.50 for 3 extra lift tickets.

- a) Write an expression to represent the total cost for any number of extra lift tickets.

- b) Find your total cost for this month if you bought 7 extra lift tickets.