1.3 Write Expressions

Before You evaluated expressions.
Now You will translate verbal phrases into expressions.
Why? So you can find a bicycling distance, as in Ex. 36.

Goal: Interpret expressions that represent a quantity in terms of its context.

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Warm-up!

Name a few words that are associated with the following operations. I gave you one to get you started!

Addition: Sum, ...

Subtraction: Decreased by, ...

Multiplication: Times, ...

Division: Quotient, ...

KEY CONCEPT *For Your Notebook*

Translating Verbal Phrases

Operation	Verbal Phrase	Expression
Addition: sum, plus, total, more than, increased by	The sum of 2 and a number x	$2 + x$
	A number n plus 7	$n + 7$
Subtraction: difference, less than, minus, decreased by	The difference of a number n and 6	$n - 6$
	A number y minus 5	$y - 5$
Multiplication: times, product, multiplied by, of	12 times a number y	$12y$
	$\frac{1}{3}$ of a number x	$\frac{1}{3}x$
Division: quotient, divided by, divided into	The quotient of a number k and 2	$\frac{k}{2}$

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Examples!

Write an expression for the following.

1. 7 more than a number *b*.

$b + 7$

2. The product of 11 and a number *x*.

$11x$

3. The difference of 18 and a number *c*.

$18 - c$

4. The quotient of a number *n* and 15.

$\frac{n}{15}$

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Same Thing-A little bit tricker...

Write an expression for the following situations.

1. The height of a wall that is *b* bricks tall if each brick is 3 inches tall.

$3b$

2. The number of miles in a 4-mile walk left to walk if you've already walked *m* miles.

$4 - m$

3. Each person's share if *p* people share 3 gallons of water equally.

$\frac{3}{p}$

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Definitions!

Rate: A fraction that compares two quantities measured in different units.

Unit Rate: When the denominator of the fraction is 1 unit.

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Unit Rate Examples

Find the unit rate for the following examples. Label!

$\frac{\$120}{10 \text{ admission tickets}}$ $12 / ticket

$\frac{6 \text{ cups}}{3 \text{ servings}}$ 2 cups / serving

$\frac{40 \text{ flowers}}{5 \text{ vases}}$ 8 flowers / vase

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Tough Unit Rate Problem!

A car travels 120 miles in 2 hours. Find the unit rate in feet per second.

$\frac{120 \text{ miles}}{2 \text{ hours}} = 60 \text{ mph}$

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Last One!

For a training program, each day you run a given distance and then walk to cool down. One day you run 2 miles, and then walk for 20 minutes at a rate of 0.1 miles per 100 seconds. What total distance do you cover?

$2 + \frac{20 \cdot 60}{100}$

$2 + \left(\frac{1200}{100}\right)(0.1)$

$2 + (12)(0.1)$

$2 + 1.2 = 3.2$

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Homework

Pages 18-19, #2-28 Even

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