Algebra 1

Chapter 2
Section 2-5

Vocabulary

Literal Equation	An equation that involves two or more variables
Formula	An equation that states a relationship between quantities.

Literal Equations

The banquet's dinner committee has a budget $200. A steak dinner costs $20. A vegetarian dinner costs $10. How many vegetarian dinners can they order, if they order 5 steak dinners? 7 steak dinners? 4 steak dinners?

Write an equation that determines the number of vegetarian dinners in terms of the number of steak dinners.

Solving Literal Equations

$7x + y = 5$, for x

$v - py = 1$, for y

$rt + f = h$, for f

$abc - a = bc$, for a

Formulas

Formula Name	Formula	Definitions of Variables
Perimeter of a rectangle	$P = 2\ell + 2w$	P = perimeter, ℓ = length, w = width
Circumference of a circle	$C = 2\pi r$	C = circumference, r = radius
Area of a rectangle	$A = \ell w$	A = area, ℓ = length, w = width
Area of a triangle	$A = \frac{1}{2}bh$	A = area, b = base, h = height
Area of a circle	$A = \pi r^2$	A = area, r = radius
Distance traveled	$d = rt$	d = distance, r = rate, t = time
Temperature	$C = \frac{5}{9}(F - 32)$	C = degrees Celsius, F = degrees Fahrenheit

Using Formulas

The circumference of a circle is 12. Estimate r.

$C = 2\pi r$

$12 = 2\pi r$

$12/2\pi = r$

$6/\pi = r$

$1.91 = r$

Formulas: Solving for Variables

Solve for time in terms of rate and distance

$$d = rt$$

$$\frac{d}{r} = \frac{rt}{r}$$

$$\frac{d}{r} = t$$

Solve for degrees F in terms of degrees C.

$$C = \frac{5}{9}(F - 32)$$

$$\left(\frac{9}{5}\right)C = \left(\frac{9}{5} \cdot \frac{5}{9}\right)(F - 32)$$

$$\left(\frac{9}{5}\right)C = F - 32$$

$$\left(\frac{9}{5}\right)C + 32 = F$$