

1.4 Notes Part 2

Learning Target: Rewrite Literal Equations: **Formulas**

Literal Equation = Equation with 2 or more variables

$$2y + 4x = 6$$

$$V = \frac{1}{3}(Bh)$$

Reminder

Math isn't Magic

You **MUST** use algebraic properties of equality to "move" terms and coefficients from one side of an equation to the other.

Addition/Subtraction Property of Equality
Multiplication/Division Property of Equality

Solutions for Literal Equations

Solve for h

$$5\pi + 2h = 35\pi$$

Review

$$8\pi h = 24$$

$$\begin{array}{r} 5\pi + 2h = 35\pi \\ -5\pi \quad -5\pi \\ \hline \end{array}$$

$$\frac{2h}{2} = \frac{30\pi}{2}$$

$$h = 15\pi$$

$$\begin{array}{r} 8\pi h = 24 \\ \hline 8\pi \quad 8\pi \end{array}$$

$$h = \frac{3}{\pi}$$

$$\frac{\cancel{5\pi}d}{\cancel{5\pi}} = \frac{\cancel{30}\pi}{\cancel{5\pi}}$$

$$\frac{5\pi d}{5\pi} = \frac{30^6}{5\pi}$$

$$d = 6$$

$$\frac{\$d}{\$} = \frac{30\pi}{5}$$

$$d = 6\pi$$

$$\frac{30}{5} = 6$$

$$\frac{\pi}{6} = \frac{1}{6}\pi$$

Re-Writing Formulas

Temperature

$$K = C + 273.15$$

This converts temperatures from Celcius to Kelvin.

Solve for C

$$K = C + 273.15$$
$$-273.15 \quad -273.15$$

$$C = K - 273.15$$

Re-Writing Formulas

Solve the formula for the red variable.

(Think about what operation connects the red variable to the others)

$$A = bh$$

$$\frac{A}{h} = \frac{b \cdot \cancel{h}}{\cancel{h}}$$

$$b = \frac{A}{h}$$

$$I = Prt$$

$$\frac{I}{rt} = \frac{P \cdot \cancel{r} \cdot \cancel{t}}{\cancel{r} \cdot \cancel{t}}$$

$$P = \frac{I}{rt}$$

Re-Writing Formulas

Area of a Triangle

$$A = \frac{1}{2}bh$$

Solve for b

$$\frac{A}{h} = \frac{\frac{1}{2}(bh)}{h}$$

$$\frac{2}{1} \cdot \frac{A}{h} = \frac{\cancel{2}}{\cancel{1}} \cdot \frac{1}{2} b$$

$$b = \frac{2A}{h}$$

Re-Writing Formulas

Solve for

ℓ

$$S = \pi r^2 + \pi r \ell$$

Surface Area
of a cone

$$S = \pi r^2 + \pi r \ell$$

Handwritten annotations: 10 above S , 5 above πr^2 , $2x$ above ℓ . A $-\pi r^2$ is written to the left. The πr^2 term in the formula is circled, and the ℓ term is also circled.

$$10 = 5 + 2x$$

Handwritten annotations: -5 below 10 , $+5$ below 5 . The 5 in the formula is circled.

$$S - \pi r^2 = \pi r \ell$$

Handwritten annotations: A horizontal line is drawn above the equation. The πr terms on both sides are crossed out with a diagonal line.

$$5 = 2x$$

Handwritten annotations: A horizontal line is drawn above the equation. The 2 and 5 are written vertically on the left side of the equation.

$$\frac{S - \pi r^2}{\pi r} = \ell$$

Handwritten annotations: The entire equation is circled in blue.

$$\frac{5}{2} = x$$

Handwritten annotations: The 2 and 5 are written vertically on the left side of the equation.

$$\frac{S - \pi r^2}{\pi r} = l$$

$$\frac{S}{\pi r} - \frac{\pi r^2}{\pi r} = l$$

$$l = \frac{S}{\pi r} - r$$

$$\frac{S}{\pi r} - \frac{\pi r}{\pi} = l$$

Re-Writing Formulas

Solve for h

$$B = 3 \frac{V}{h}$$

$$h \cdot B = 3 \frac{V}{\cancel{h}} \cdot \cancel{h}$$

$$\frac{h \cdot \cancel{B}}{\cancel{B}} = \frac{3V}{\cancel{B}}$$

$$h = \frac{3V}{B}$$

Homework

Pg. 30 and 31

#3, 5, 6, 8, 9, 13, 14-19

**Reminder - Chapter 1 Test is on
Wednesday**

You can see me for extra help

- **Wednesday 7:30 AM**