

Objective: TSWBAT rewrite and use literal equations and formulas

Vocabulary

① literal equation- an equation that involves two or more variables

① Solve the following for r

$$D = rT$$

② Solve the following for g

$$y = \frac{f+g}{3}$$

Solve the following for b_1

③ $A = \frac{1}{2}(b_1 + b_2)h$

④ Solve for C

$$F = \frac{9}{5}C + 32$$

⑤ Solve for d

$$G = \frac{Fd^2}{M_1 M_2}$$

① Solve the following for r

$$D = r \frac{f}{T}$$

$$r = \frac{D}{T}$$

② Solve the following for g

$$(3) \quad y = \frac{f+g}{2}$$

$$(3) \quad \begin{array}{r} 3y = f+g \\ -f \quad -f \\ \hline \end{array}$$

$$3y - f = g$$

Solve the following for b_1

$$(3) \quad \frac{A}{h} = \frac{1}{2}(b_1 + b_2)h$$

$$(2) \quad \frac{A}{h} = \frac{1}{2}(b_1 + b_2)$$

$$\begin{array}{r} \frac{2A}{h} = b_1 + b_2 \\ -b_2 \quad -b_2 \\ \hline \end{array}$$

$$\frac{2A}{h} - b_2 = b_1$$

④ Solve for C

$$(5) \quad (5) \quad (5)$$

$$F = \frac{9}{5}C + 32$$

$$\begin{array}{r} 5F = 9C + 160 \\ -160 \quad -160 \\ \hline \end{array}$$

$$\begin{array}{r} 5F - 160 = 9C \\ \hline 9 \quad 9 \\ \hline \end{array}$$

$$\frac{5}{9}F - \frac{160}{9} = C$$

⑤ Solve for d

$$(m_1 m_2) \quad 6 = \frac{F d^2}{m_1 m_2} \quad (m_1 m_2)$$

$$\frac{6(m_1 m_2)}{F} = \frac{F d^2}{F} \quad \sqrt{\frac{6(m_1 m_2)}{F}} = d$$



Problem 1 Rewriting a Literal Equation

Got It? Solve the equation $4 = 2m - 5n$ for m . What are the values of m when $n = -2, 0,$ and 2 ?

$$4 = 2m - 5n$$
$$\frac{+5n}{+5n} \quad \frac{+5n}{0}$$

$$\frac{5n+4}{2} = \frac{2m}{2}$$

$$\frac{5n+4}{2} = m$$

$$\cdot \frac{5(-2)+4}{2} = (-3)$$

$$\cdot \frac{5(0)+4}{2} = (2)$$

$$\cdot \frac{5(2)+4}{2} = (7)$$



Problem 2 Rewriting a Literal Equation With Only Variables

Got It? What equation do you get when you solve $-t = r + px$ for x ?

$$-r - r$$

$$\frac{-T-r}{p} = \frac{p}{p}x$$

$$\frac{-T-r}{p} = x$$



Problem 2 Rewriting a Literal Equation With Only Variables

Got It? What equation do you get when you solve $-t = r + px$ for x ?



Problem 3 Rewriting a Geometric Formula

Got It? What is the height of a triangle that has an area of 24 in.^2 and a base with a length of 8 in.?

12. Circle the formula for the area of a triangle.

$$A = \pi r^2$$

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

$$d = rt$$

$$A = \ell w$$

13. Circle the rewritten formula you will use to find the height of the triangle.

$$\ell = \frac{P - 2w}{2}$$

$$r = \sqrt{\frac{A}{\pi}}$$

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

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

14. Now find the height of a triangle with an area of 24 in.^2 and a base of 8 in.



Problem 4 Rewriting a Formula

Got It? Pacific gray whales migrate annually from the waters near Alaska to the waters near Baja California, Mexico, and back. The whales travel a distance of about 5000 mi each way at an average rate of 91 mi per day. About how many days does it take the whales to migrate one way?

15. Write the formula that relates distance, rate, and time.

$$\square = \square \cdot \square$$

16. Circle what you are asked to find in the problem.

distance

rate

time

Homework: page 112, 11-31 and page 113, 36-41