Put up your phones and get out your solving equations sheet. We will check your work and solve any if needed.

Solve each equation or formula for the specified variable.

21. $E = mc^2$, for m

22. $c = \frac{2d+1}{3}$, for d

23. $h = vt - gt^2$, for v

24. $E = \frac{1}{2}Iw^2 + U$, for I

Solving Equations (Section 1-3)

Learning Targets:

-I can solve equations.

-I can solve literal equations for a specified variable.

Example 1: Write an algebraic expression to represent each verbal expression.

a. 2 more than 4 times the cube of a number

b. the quotient of 5 less than a number and 12

You Try 1:

c. the cube of a number increased by 4 times the same number

d. three times the difference of a number and 8

Example 2: Write a verbal sentence to represent each equation.

a. $6x = 72$

b. $n + 15 = 91$

c. $4(x+5) = 12$

You Try 2:

d. $g - 5 = -2$

e. $2c = c^2 - 4$

f. $2(x-2) = 6$

Example 3: Solve each equation. Check your solution.

a. n - 3.24 = 42.1

b. $-\frac{5}{8}x = 20$

You try 3:

c. x - 14.29 = 25

d. $\frac{2}{3}y = -18$

Example 4: Solve each equation.

$x = -1$

a. $5(x + 3) + 2(1 - x) = 14$

$5x + 15 + 2 - 2x = 14$

$3x + 17 = 14$

$\frac{3x}{3} = \frac{-3}{3}$

$x = -1$

You Try 4:

c. $-10x + 3(4x - 2) = 6$

d. $2(2x - 1) - 4(3x + 1) = 2$

Example 5: Literal Equations $A = \frac{1}{2}h(b_1 + b_2)$

a. **GEOMETRY** The formula for the area A of a trapezoid is $A = \frac{1}{2}h(b_1 + b_2)$, where h represents the height, and b_1 and b_2 represent the measures of the bases. Solve the formula for b_2.

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

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

$$-b_1 \quad -b_1$$

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

$$b_2 = \frac{A}{\frac{1}{2}h} - b_1$$

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

You Try 5:

The formula for the surface area S of a cylinder is $S = 2\pi r^2 + 2\pi rh$, where r is the radius of the base and h is the height of the cylinder. Solve the formula for h.

$h = \frac{S}{2\pi r} - r$

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

$-2\pi r^2 \quad -2\pi r^2$

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

$\frac{a+b}{c} = \frac{a}{c} + \frac{b}{c}$

$\cdot 2\pi r$

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

$h = \frac{S}{2\pi r} - r$

$\frac{S}{2\pi r} = \frac{2\pi r^2}{2\pi r} + \frac{2\pi rh}{2\pi r}$

$\frac{S}{2\pi r} = r + h$

$-r \quad -r$

$\frac{S}{2\pi r} - r = h$

You Try 6:

If $6x - 12 = 18$, what is the value of $6x + 5$?

A 5 **B** 11 **C** 35 **D** 41

Quiz

When you finish, get out a chromebook. Your number matches your phonecaddy number.

Sign up for Google Classroom and open Quizizz.

Homework

Complete the notes on Google Classroom using the link to fill out the notes.