

ALG.b

Date _____ Period _____

ALG.b.1

Solve AND CHECK one-step linear equations. Clearly show EACH STEP. Circle your answer.

1) $17 + x = 15$

$$\begin{array}{r} -17 \\ \hline \end{array}$$

$$X = -2$$

Show
this
step

2) $-11 = x - 2$

$$\begin{array}{r} +2 \\ \hline \end{array}$$

$$X = -9$$

Circle
SolutionRemember to show
work going down.

C: $17 + (-2) = 15$
 $15 = 15 \checkmark$

Check Solution
in the original
Equation

C: $-11 = -9 - 2$
 $-11 = -11 \checkmark$

Label
check
with C

3) $\frac{x}{17} = -10$

4) $-16x = -64$

3

$$\left(\frac{17}{1}\right)\left(\frac{x}{17}\right) = -10\left(\frac{17}{1}\right)$$

$$X = -170$$

C: $\frac{-170}{17} = -10$

$$-10 = -10 \checkmark$$

4

$$\begin{array}{r} 1 \\ -16x = -64 \\ \hline -16 \end{array}$$

$$X = 4$$

C: $-16(4) = -64$
 $-64 = -64 \checkmark$

ALG.b

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ALG.b.2

Solve AND CHECK 2-step linear equations. Clearly show EACH STEP. Circle your answer.

$$1) 5r + 9 = 29$$

$$\begin{array}{r} 5r + 9 = 29 \\ -9 \quad -9 \\ \hline 5r = 20 \\ \div 5 \quad \div 5 \\ \hline r = 4 \end{array}$$

$$C: 5(4) + 9 = 29 \\ 29 = 29 \checkmark$$

$$3) -64 = -4 - 4x$$

$$\begin{array}{r} -64 = -4 - 4x \\ +4 \quad +4 \\ \hline -60 = -4x \\ \div -4 \quad \div -4 \\ \hline x = 15 \end{array}$$

$$C: -64 = -4 - 4(15) \\ -64 = -4 - 60 \\ -64 = -64 \checkmark$$

$$2) \frac{n}{2} - 10 = -4$$

$$\begin{array}{r} \frac{n}{2} - 10 = -4 \\ +10 \quad +10 \\ \hline \frac{n}{2} = 6 \\ \cdot 2 \quad \cdot 2 \\ \hline n = 12 \end{array}$$

$$C: \frac{12}{2} - 10 = -4 \\ 6 - 10 = -4 \\ -4 = -4 \checkmark$$

optional step

$$4) -1 = \frac{x}{2} - 5$$

$$\begin{array}{r} -1 = \frac{x}{2} - 5 \\ +5 \quad +5 \\ \hline 4 = \frac{x}{2} \\ \cdot 2 \quad \cdot 2 \\ \hline x = 8 \end{array}$$

$$C: -1 = \frac{8}{2} - 5 \\ -1 = 4 - 5 \\ -1 = -1 \checkmark$$

To solve 2-step EQUATIONS

- (green) STEP 1 UNDO ADDITION AND SUBTRACTION.
- (purple) STEP 2 UNDO MULTIPLICATION AND DIVISION.
- (blue) STEP 3 Check solution in the original EQUATION

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ALG.b.4

Solve literal equations with three or more variables, by isolating an indicated variable. Clearly show EACH STEP. Circle your answer.

1) $z = 3b + 24a$, for a

$$\begin{array}{r} -3b \quad -3b \\ \hline 24a = z - 3b \\ \hline a = \frac{z - 3b}{24} \end{array}$$

$$a = \frac{z - 3b}{24}$$

2) $-3 - 2x = -4r - d$, for x

$$\begin{array}{r} +3 \quad +3 \\ \hline -2x = -4r - d + 3 \\ \hline x = \frac{-d - 4r + 3}{-2} \end{array}$$

$$x = \frac{-d - 4r + 3}{-2}$$

3) $4a = \frac{w + 4v}{b}$, for a

$$\frac{1}{4} \left(\frac{4a}{1} \right) = \left(\frac{w + 4v}{b} \right) \cdot \frac{1}{4}$$

$$a = \frac{4v + w}{4b}$$

OR

$$x = \frac{d + 4r - 3}{2}$$

ORDER VARIABLE TERMS IN ABC ORDER!

Isolate "Y". (these are special equations in slope-intercept form)

4) $-15 = -3x - 5y$

$$\begin{array}{r} +3x \quad +3x \\ \hline -5y = 3x - 15 \\ \hline y = -\frac{3}{5}x + 3 \end{array}$$

$$y = -\frac{3}{5}x + 3$$

5) $-2y - 8x + 10 = 0$

$$\begin{array}{r} +8x \quad +8x \\ \hline -2y + 10 = 8x \\ \hline -2y = 8x - 10 \\ \hline y = -4x + 5 \end{array}$$

$$y = -4x + 5$$

SLOPE INTERCEPT FORM:

$$y = mx + b; m + b \text{ are numbers}$$