Name_____ Date_____ Period_____

LESSON 8-1 · SESSION 1 · PRACTICE · FORM A

Equations and Solutions

Learning target – I can check whether a value is a solution of an equation by substituting it. · 6.EE.B.5

REMEMBER

- An **equation** says two amounts are equal: $x + 3 = 10$.
- To test a value, **substitute** it for the variable. Then do the math.
- If both sides match, the value is a **solution**. $4k = 20$ with $k = 5$: $4 \times 5 = 20$, true.

WORKED EXAMPLE

A basket has b apples. You add 9 more and have 15. Is $b = 6$ a solution of $b + 9 = 15$?

Step 1 Substitute: replace b with 6 to get $6 + 9$.

Step 2 Add: $6 + 9 = 15$.

Step 3 Compare: $15 = 15$, so the equation is true.

Answer **Yes, $b = 6$ is a solution.**

WORDS **equation** *(ecuación)* · **solution** *(solución)* · **substitute** *(sustituir)*

PRACTICE

show your work · label units

1. Substitute the value. Write **T** for true or **F** for false.

a. $s - 15 = 25$ $(s = 40)$ ___

b. $7r = 42$ $(r = 5)$ ___

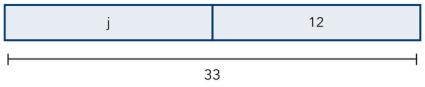
c. $p + 18 = 47$ $(p = 29)$ ___

d. $4k = 36$ $(k = 32)$ ___

e. $n - 4 = 3$ $(n = 7)$ ___

f. $m + 23 = 41$ $(m = 18)$ ___

2. **Juice Box Cooler.** A cooler holds j juice boxes. The coach adds 12 more. Now there are 33. The tape diagram shows $j + 12 = 33$.



a. Test $j = 21$. _____

b. Test $j = 19$. _____

c. Which value is the solution? _____

3. **Pencil Packs.** Tanisha wrote $6p = 72$ for packs of pencils. Find the solution. Prove it.

Show your work.

p =_____

4. **Bake Sale.** Amara wrote $c - 24 = 36$ for cupcakes left. Is $c = 60$ a solution? Check.

Hint *Replace c with 60. Do both sides match?*

Show your work.

Yes or no_____

5. **Equal Teams.** Coach writes $4t = 28$ for equal teams. Ray says $t = 7$. Is Ray correct? Check.

Hint *4t means 4 × t.*

Show your work.

Yes or no_____

6. **Library Fine.** Jun owes a library fine. After he pays $2, he still owes $11. Write an equation using f for the starting fine. Then find f by testing values.

Hint *Start minus what he paid leaves what he owes.*

Show your work.

Equation; f_____

7. **Game Tokens.** Deshawn wrote $5g = 45$ for the games he can play with 45 tokens. He says $g = 8$. Check his value. Then find the real solution.

Hint *Substitute his value first. Then try the next number.*

Show your work.

g =_____

8. **Number Puzzle.** A puzzle reads: a number plus 17 equals 45.

a. Write the equation using n. _____

b. Test $n = 28$. Is it the solution? _____

c. How is testing a value different from solving? _____

FIND THE ERROR

explain the mistake, then fix it

9. **Maya's Work.** To check whether $k = 12$ is a solution of $k + 30 = 42$, Maya wrote $12 + 30 = 42$, so $42 = 42$. Then she said the solution is 42. Explain her mistake.

_____

_____

_____

TEST PRACTICE

choose the best answer

10. Is $x = 6$ a solution of $x + 5 = 11$?

A yes **B** no **C** only if $x = 5$ **D** cannot tell

11. Is $y = 3$ a solution of $5y = 20$?

A yes **B** no **C** only if $y = 5$ **D** cannot tell

SELF-CHECK CODE *find your answer · copy its letter into that problem's box · spell a math word*

12 Q	45 Z	432 X	62 J	21 E	13 U	28 L	40 K	9 A

#2c	#3	#6	#7	#8b

CHECK YOURSELF	☐ I can do this on my own	☐ I need a little help	☐ I have a question about #___