Name_____ Date_____ Period_____

LESSON 9-4 · SESSION 2 · PRACTICE · FORM A

Working Backward to a Goal

Learning target – I can work backward from a goal to find the input an equation needs. · 6.EE.C.9

REMEMBER

- **Work backward**: put the goal in the equation, then undo the math.
- With a fee, **subtract** it first, then **divide**: 20 = 4*n* + 8, so 20 − 8 = 12 and 12 ÷ 4 = 3.
- If only whole items make sense, check whether you must **round up**.

WORKED EXAMPLE

Tickets cost $6. A club needs at least $100. How many tickets?

Step 1 Put in the goal: 100 = 6*n*.

Step 2 Divide: 100 ÷ 6 ≈ 16.7.

Step 3 16 × 6 = $96 is too low; 17 × 6 = $102 is enough.

Answer **17 tickets**

WORDS **work backward** *(trabajar hacia atrás)* · **inverse operation** *(operación inversa)* · **goal** *(meta)*

PRACTICE

show your work · label units

1. Solve for *x*.

a. 9*x* = 126 ____

b. 6*x* = 90 ____

c. 4*x* + 8 = 52 ____

d. 5*x* + 30 = 155 ____

2. **School Garden.** A class sells painted flower pots for $12 each. It needs to raise $660.

a. Write an equation for the money *m* from *p* pots. _____

b. Put in the goal and work backward. _____ pots

c. If the class sells only 44 pots, what price must it charge? _____ dollars

3. **Read-a-thon.** Sponsors pay Leah $3 for each page she reads. How many pages must she read to raise $210?

Hint *Divide the goal by the pay for one page.*

Show your work.

Answer_____ pages

4. **Talent Show.** Tickets cost $7 each. How many tickets must the club sell to raise $350?

Hint *Undo the multiplication.*

Show your work.

Answer_____ tickets

5. Charging Station. A charger adds 9 miles of range every minute. Write an equation. How many minutes to add 135 miles?

Hint *The goal replaces r. Then divide.*

Show your work.

Answer_____ minutes

6. Concert Tickets. Tickets cost $25 each. A group has $310 and says it can buy 13 tickets. Does the plan work? What is the most it can buy?

Show your work.

Most tickets_____

7. Class Trip Fund. A class has $90. It earns $15 for each raffle ticket sold. It needs $600 in all.

Hint *Subtract what the class already has first.*

a. Write an equation for the money m after k tickets are sold. _____

b. How many tickets must be sold to reach $600? _____

Show your work.

8. Round Up. A club earns $8 for each ticket and needs $300.

Hint *You cannot sell part of a ticket.*

a. Solve $8t = 300$. _____

b. How many tickets must the club sell? _____

FIND THE ERROR

explain the mistake, then fix it

9. Renata's Work. Wristbands cost $4 each. Renata needs $96. She wrote $4b = 96$ and then answered 384 wristbands. Explain her mistake and find the correct number.

TEST PRACTICE

choose the best answer

10. Solve $9n = 117$.

A 108 **B** 13 **C** 126 **D** 1,053

11. For $c = 4n + 8$, if $c = 40$, then n is –

A 12 **B** 10 **C** 8 **D** 168

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

15	12	34	38	50	630	40	55	37	70
E	R	S	E	V	X	Q	I	Z	N

#2b	#3	#4	#5	#6	#7b	#8b

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