Name_____ Date_____ Period_____

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

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. 8*x* = 96 ____

b. 7*x* = 119 ____

c. 3*x* + 6 = 45 ____

d. 6*x* + 20 = 110 ____

2. **Candle Sale.** A club sells candles for $9 each. It needs to raise $540.

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

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

c. If the club sells only 45 candles, what price must it charge? _____ dollars

3. **Walk-a-thon.** Sponsors pay Omar $5 for each lap he walks. How many laps must he walk to raise $185?

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

Show your work.

Answer_____ laps

4. **Spring Play.** Tickets cost $6 each. How many tickets must the club sell to raise $324?

Hint *Undo the multiplication.*

Show your work.

Answer_____ tickets

5. Charging Station. A charger adds 7 miles of range every minute. Write an equation. How many minutes to add 168 miles?

Hint *The goal replaces r. Then divide.*

Show your work.

Answer_____ minutes

6. Movie Tickets. Tickets cost $18 each. A group has $200 and says it can buy 11 tickets. Does the plan work? What is the most it can buy?

Show your work.

Most tickets_____

7. Band Trip Fund. A band has $80. It earns $16 for each T-shirt sold. It needs $560 in all.

Hint *Subtract what the band already has first.*

a. Write an equation for the money m after k T-shirts are sold. _____

b. How many T-shirts must be sold to reach $560? _____

Show your work.

8. Round Up. A club earns $9 for each ticket and needs $300.

Hint *You cannot sell part of a ticket.*

a. Solve $9t = 300$. _____

b. How many tickets must the club sell? _____

FIND THE ERROR

explain the mistake, then fix it

9. Darius's Work. Stickers cost $5 each. Darius needs $85. He wrote $5s = 85$ and then answered 425 stickers. Explain his mistake and find the correct number.

_____

_____

_____

TEST PRACTICE

choose the best answer

10. Solve $8n = 136$.

A 17 **B** 128 **C** 144 **D** 1,088

11. For $c = 6n + 12$, if $c = 48$, then n is –

A 10 **B** 6 **C** 300 **D** 8

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

11	54	35	60	37	925	24	33	30	34
R	V	Q	R	E	X	E	Z	S	E

#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 #___