

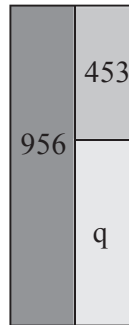
# Practice 3-7

## Problem Solving

1. In a city, Building P is 453 feet taller than Building Q. The height of Building P is 956 feet.

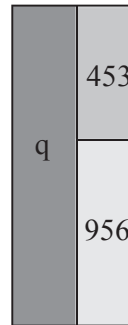
a) Which diagram and equation represent the problem?

☐ A.



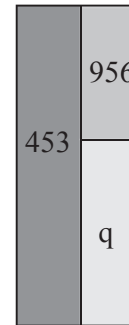
$$q + 453 = 956$$

☐ B.



$$q + 956 = 453$$

☐ C.



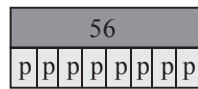
$$q - 453 = 956$$

b) What is the height,  $q$ , of Building Q?

2. The students in the art club sold scented candles to raise funds. One student sold 8 candles and raised \$56. Let  $p$  be the number of dollars for each candle.

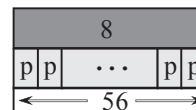
a) Which bar diagram and equation model the problem?

☐ A.



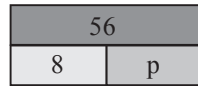
$$8p = 56$$

☐ C.



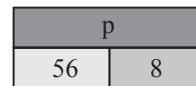
$$8 \div p = 56$$

☐ B.



$$p + 8 = 56$$

☐ D.



$$p - 8 = 56$$

b) What was the selling price for each candle?

3. A type of fish for your aquarium costs \$3 each. You can spend at most \$27. Let  $f$  be the number of fish you can buy.

a) Which inequality models the problem?

☐ A.  $f + 3 \geq 27$

☐ C.  $3f \leq 27$

☐ B.  $3f \geq 27$

☐ D.  $f + 3 \leq 27$

b) How many of these fish can you buy?

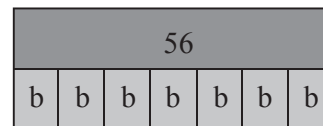
4. Can this bar diagram represent both a multiplication and a division equation?

☐ A. No, the diagram can only represent  $b \div 7 = 56$ .

☐ B. Yes, the diagram can represent  $56b = 7$  or  $b \div 7 = 56$ .

☐ C. Yes, the diagram can represent  $7b = 56$  or  $56 \div b = 7$ .

☐ D. No, the diagram can only represent  $56b = 7$ .



5. The employees at a local business make 4,704 photocopies during a normal month. (Hint: There are about 21 work days per month.) Let  $n$  be the number of copies made each day.

a) Which bar diagram and equation model the problem?

☐ A. 

4,704	
n	21

  
 $n + 21 = 4,704$

☐ B. 

n	
4,704	21

  
 $n - 4,704 = 21$

☐ C. 

21		
n	n	...

  
 $\leftarrow 4,704 \rightarrow$   
 $n \div 21 = 4,704$

☐ D. 

4,704		
n	n	...

  
 $\leftarrow 21 \rightarrow$   
 $21n = 4,704$

b) About how many copies do the employees make each day?

6. A textbook has 370 pages. There are 14 pages in the index. Let  $p$  be the number of pages not in the index.

a) What is an addition equation that models the problem?

b) How many pages of the textbook are not in the index?

7. A teacher writes the inequality  $x \div 7 < 14$  on the board. A student solves the inequality incorrectly and gets the result  $x < 2$ .

a) What is the correct result?

b) Why is the student's result incorrect?

☐ A. The student should have added, not divided.

☐ B. The student should have multiplied, not divided.

☐ C. The inequality sign in the result should be  $>$ , not  $<$ .

☐ D. The result should be an equation, not an inequality.

8. A traffic helicopter descends 127 meters to be 477 meters above the ground. Let  $h$  be the original height of the helicopter.

a) What is a subtraction equation that models the problem?

b) What was the original height of the helicopter?

9. A group of friends do yardwork to earn extra money. They charge \$10 to mow a lawn and \$15 an hour to prune trees and shrubs. The group earned \$140 last summer. They mowed 8 lawns and earned \$80.

a) Which bar diagram and equation model the problem?

☐ A. 

140		
p	...	p
$\longleftrightarrow 80 \longrightarrow$		

  
 $80p = 140$

☐ C. 

140	
p	80

  
 $p + 80 = 140$

☐ B. 

80		
p	...	p
$\longleftrightarrow 140 \longrightarrow$		

  
 $80 \div p = 140$

☐ D. 

p	
140	80

  
 $p - 80 = 140$

b) How many dollars,  $p$ , did the group earn pruning?

10. **Challenge** Each month, a shopkeeper spends \$2,715 for rent, electricity, and water. She spends \$2,500 for rent and \$170 for electricity. Let  $w$  be the amount in dollars the shopkeeper spends on water.

a) What is an addition equation that models the problem?

☐ A.  $2,500 + w = 2,715$

☐ C.  $170 + w = 2,500$

☐ B.  $2,715 + w = 2,670$

☐ D.  $2,670 + w = 2,715$

b) How much does the shopkeeper spend for water?

11. **Challenge** A student needs three pieces of wire for an art project. The second piece must be 4 times as long as the first. The third piece must be 2 times as long as the second. The student has 390 inches of wire. What are the possible lengths for the shortest piece of wire?

