Math 7 Period _____ Name_____

7.6 Expressions and Equations Mid-Unit Review Date_____

Place of Power

Please **read carefully**. Answer the questions and **<u>reread</u> the problems carefully** to be sure that you have followed the directions.

Show your work and explain your answers!

1. This hanger is in balance. There are three labeled weights of 4.5 grams and 36 grams. The three circles each have the same weight.

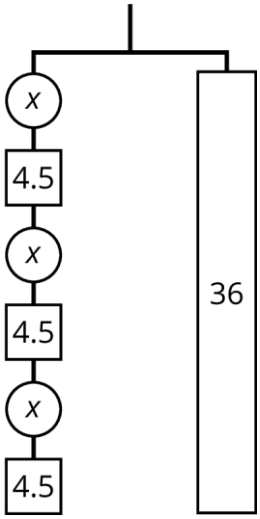
   What is the weight of each circle, in grams?

   a. 22.5

   b. 7.5

   c. 1

   d. $\frac{1}{15}$



2. Jada is collecting stickers. After getting 15 more stickers, she has 60 stickers in total.

   Select **all** the equations Jada can solve to find x, the number of stickers she started with.

   a. $x + 15 = 60$

   b. $x - 15 = 60$

   c. $x = 60 + 15$

   d. $x = 60 - 15$

   e. $15x = 60$

   f. $x = 60 \cdot 15$

   g. $x = \frac{60}{15}$

3. Solve each equation using properties of equality. Check your solution.

A. $12 - 2p = 36$ Check:

B. $\frac{1}{4}(q - 5) = -2$ Check:

4. Select **all** the equations that are true when x is -4.

a. $-8 = 2x$

b. $-12 = x \cdot -3$

c. $-12 = x + x + x$

d. $\frac{x}{4} = -1$

e. $x + 4 = -8$

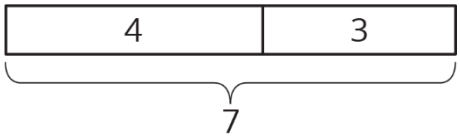
5. Write an equation for each story. Then, find the number of problems originally assigned by each teacher. If you get stuck, try drawing a diagram to represent the story.

A. Five students came for after-school tutoring. Lin's teacher assigned each of them the same number of problems to complete. Then he assigned each student 2 more problems. 30 problems were assigned in all.

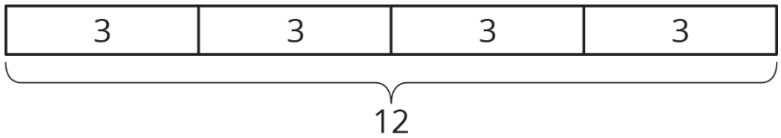
B. Five students came for after-school tutoring. Priya's teacher assigned each of them the same number of problems to complete. Then she assigned 2 more problems to one of the students. 27 problems were assigned in all.

6. Next to each equation, write *A*, *B*, or *neither*, to indicate whether it matches diagram A, diagram B, or neither diagram.

A



B



P. $7 = 3 + 4$

Q. $4 - 3 = 7$

R. $7 - 4 = 3$

S. $4 \cdot 3 = 7$

T. $3 + 3 + 3 + 3 = 12$

U. $12 = 4 \cdot 3$

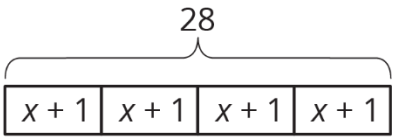
V. $12 \div 4 = 3$

W. $3 \cdot 3 \cdot 3 \cdot 3 = 12$

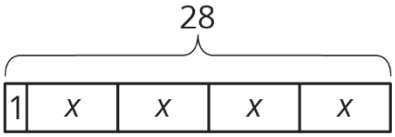
7. Here is a story: Lin bought 4 bags of apples. Each bag had the same number of apples. After eating 1 apple from each bag, she had 28 apples left.

A. Which diagram best represents the story? Explain why the diagram represents it.

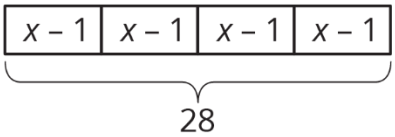
A



B



C



B. What part of the story does x represent?

C. Write and solve an equation to find the unknown amount in the story.

Sample Answers:

1. b

2. a,d

3. A. $p = -12$ B. $q = -3$

4. a,c, d

5.A. $5(x + 2) = 30, x = 4$

B. $5x + 2 = 27, x = 5$

6.

P.	A	T.	B
Q.	neither	U.	B
R.	A	V.	B
S.	neither	W.	neither

7.A. Diagram C shows 4 equal parts with one taken out.

B. The number of apples before Lin started eating.

C. Split 28 into 4 groups of 7 and add one to get 8.

Sample Answers:

1. b

2. a,d

3. A. $p = -12$ B. $q = -3$

4. a,c, d

5.A. $5(x + 2) = 30, x = 4$

B. $5x + 2 = 27, x = 5$

6.

X.	A	BB.	B
Y.	neither	CC.	B
Z.	A	DD.	B
AA.	neither	EE.	neither

7.A. Diagram C shows 4 equal parts with one taken out.

B. The number of apples before Lin started eating.

C. Split 28 into 4 groups of 7 and add one to get 8.