Name _____ Date _____

Writing Equations and Inequalities from Word Problems Unit Review

Directions: Each question asks you to choose or solve an equation or inequality that models a sentence or situation. Read exactly what each variable stands for, and use the price list where a question asks.

1. Match each sentence about a number n to the equation or inequality that says the same thing.

Write the letter of the matching answer on each line.

1. _____ Five more than twice n is at least 17.
2. _____ Twice the sum of n and 5 is 17.
3. _____ Five less than twice n is at most 17.
4. _____ Twice n is 5 more than 17.

A. $2(n + 5) = 17$
B. $2n - 5 \leq 17$
C. $2n + 5 \leq 17$
D. $2n = 17 + 5$
E. $2n + 5 \geq 17$
F. $5 - 2n \leq 17$

2. A climbing gym charges a $25 sign-up fee plus $12 for each visit. So far, Jordan has paid $97 in all. Let v be the number of visits Jordan has made. Which equation models this situation?

A. $12v - 25 = 97$ B. $12 + 25v = 97$ C. $25 + 12v = 97$ D. $37v = 97$

3. For one repair, a plumber's bill was $209. The bill was a $65 trip fee plus $48 for each hour of work. How many hours did the plumber work?

_____ hours

4. Kai and his sister start at the same spot and bike in opposite directions along a straight trail. Kai rides at 14 miles per hour and his sister rides at 11 miles per hour. Let t be the number of hours since they started. Which equation can be solved to find when they are 75 miles apart?

A. $14t - 11t = 75$
B. $14t + 11t = 75$
C. $t/14 + t/11 = 75$
D. $14 + 11 = 75t$

5. A pool has 1,200 gallons of water in it. Water drains out at a steady rate of 75 gallons per minute. After how many minutes will 450 gallons be left in the pool?

_____ minutes

6. The sum of three consecutive integers is 78. Let n be the smallest of the three integers. Which equation fits this situation?

A. $n + n + n = 78$
B. $n + (n + 1) + (n + 2) = 78$
C. $n(n + 1)(n + 2) = 78$
D. $n + (n + 2) + (n + 4) = 78$

7. Two consecutive even integers add up to 146. What is the greater of the two integers?

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8. A school club has $60 to spend on a pizza party. The pizza shop charges an $8 delivery fee plus $13 for each pizza. Let p be the number of pizzas the club orders. Which inequality shows that the club spends at most $60?

A. $8 + 13p < 60$ B. $13 + 8p \leq 60$ C. $8 + 13p \geq 60$ D. $8 + 13p \leq 60$

9. Leo has already saved \$90, and he earns \$11 for each hour he works. Let h be the number of hours he works from now on. Which inequality describes the hours that give him at least \$310 in all?

A. $90 + 11h \leq 310$ B. $90 + 11h \geq 310$ C. $11h \geq 310$ D. $90 + 11h > 310$

School Carnival Prices

Use the price list for these questions.

Price list for a school carnival

Item	Price
Entry wristband	\$6.00
Game ticket	\$1.25
Snack bag	\$2.50
Drink	\$1.75

10. Ruby has \$25 to spend at the carnival. She buys one entry wristband, one drink and some game tickets. Let g be the number of game tickets she buys. Which inequality shows that she spends at most \$25?

A. $6 + 1.75 + 1.25g \geq 25$ B. $6 + 1.75g + 1.25 \leq 25$

C. $6 + 1.25g \leq 25$ D. $6 + 1.75 + 1.25g \leq 25$

11. Ruby has \$25 for the carnival. After she buys one entry wristband and one drink, she buys as many game tickets as her remaining money allows. What is the greatest whole number of game tickets she can buy?

_____ tickets

12. A class sells snack bags at the price in the price list to raise money for a trip. The class needs to bring in at least \$146 from snack bags. What is the least whole number of snack bags the class must sell?

_____ snack bags

13. Which situations can be modeled by the equation $4x + 10 = 50$? Select the two correct situations.

- ☐ A. A fair charges \$4 to enter plus \$10 for each ride, and Ama spends \$50 in all on entry and x rides.
- ☐ B. A plant is 10 cm tall and grows 4 cm each week, and after x weeks it is 50 cm tall.
- ☐ C. A fair charges \$10 to enter plus \$4 for each ride, and Ama spends at least \$50 on entry and x rides.
- ☐ D. Four friends split a \$50 bill and a \$10 tip equally, and each pays x dollars.
- ☐ E. A fair charges \$10 to enter plus \$4 for each ride, and Ama spends \$50 in all on entry and x rides.

14. Two consecutive positive integers have a product of 132. What is the smaller of the two integers?

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