Examining Equations and Inequalities

1. The cost of a gallon of orange juice is $3.50. Write an inequality to determine the maximum number of gallon containers you can buy for $15.

 Define variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Which statement can be modeled by *x* + 3 12?

1. Sam has 3 bottles of water. Together, Sam and Dave have at most 12 bottles of water.

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jennie sold 3 cookbooks. To earn a prize, Jennie must sell at least 12 cookbooks.

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Peter has 3 baseball hats. Peter and his brothers have fewer than 12 baseball hats.

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Kathy swam 3 laps in the pool this week. She must swim more than 12 laps.

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Four times a number decreased by three is greater than 48. Write an inequality that could be used to find the possible values for the number.

Define variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Five plus the quotient of a number and 15 is no greater than 450. Write an inequality that could be used to find the possible values for the number.

Define variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Your brother has $2,000 saved for a vacation. His airplane ticket is $637. If your brother wants to stay for 5 days, write an inequality to show the maximum he can spend per day if he wants to spend about the same amount of money each day.

Define variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Look at the inequality below.

4*s* < 25

 Which of the following scenarios could be represented by this inequality?

1. The area of a square is at least 25 square feet. What are the possible side lengths of the square?

Define variable: *s* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Sharon has $4 less than her sister. Her sister has less than $25. How much money, *s*, does Sharon have?

Define variable: *s* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Oscar has less than 25 math problems to do for homework. He works 4 extra problems for extra credit. How many math problems, *s*, did Oscar complete?

Define variable: *s* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Conrad wants to build a square sandbox with a perimeter of no more than 25 feet. What are the possible side lengths of the sandbox?

Define variable: *s* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Look at the inequality below.

*b* + 16 > 46

1. Barbara has no more than $46 in her bank account. She withdraws $16 to buy gas. How much money, *b* does she have remaining in the bank account?

Define variable: *b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Ben can do 16 push-ups in one minute. How many push-ups, *b*, can Ben complete in 46 minutes?

Define variable: *b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Bozo the Clown has a bag of candy for the children at the circus. He buys 16 more pieces of candy and now the bag has more than 46 pieces of candy. How many pieces of candy, *b*, were in the bag before Bozo purchased the 16 extra pieces?

Define variable: *b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Bing has no less than 46 action figures. He purchases 16 storage boxes to store the figures. If he stores about the same amount in each box, how many action figures, *b*, can he store in each box?

Define variable: *b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. The perimeter of a square is greater than 24 inches. Which of the following inequalities represents this situation?

A.  B.  C.  D. 

9. Which situation can be modeled by the inequality shown below?



1. Jill saves $4 per week. How much money will she have in fewer than 10 weeks?

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Together, Raj and his brother have fewer than $10 to spend on lunch. His brother has 4 dollars. How much money does Raj have?

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Olivia buys 4 lbs. of grapes. She puts them equally into fewer than 10 containers. What is the weight of each container?

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Jim received a discount of $4 on his lunch and the total bill was less than $10. What was the original price of his lunch?

Define variable: *x* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Which triangle shows side lengths that can match the scenario shown below?

15*m* – 26 = 7*m* + 10

Draw and label each triangle in the space provided.

1. A triangle with side lengths 3*m* + 10, 7, and 15*m* with a perimeter of 26 cm.
2. An isosceles triangle with side lengths of 26, 3*m* + 10 and 7*m* – 15.
3. An equilateral triangle with side lengths that measure 15*m* – 26, 7*m* + 10, and 3*m*.
4. A scalene triangle with sides that measure 26, 15*m* + 3, and 10*m* + 7.

11. An electrician has a roll with 45 feet of wire. She uses 23.5 feet of the wire on one project, and will cut *p* 3-foot pieces from the rest of the roll. Which inequality matches this situation?

A. 3*p* + 23.5 $\geq $ 45 B. 3*p* + 23.5 $\leq $ 45 C. 3*p* – 23.5 $\geq $ 45 D. 3*p* – 23.5 $\leq $ 45