


## Seventh Grade Benchmark #2

### Math Essential Standards

#### *Learning Objective #1:*

-  "Use proportional relationships to solve multi-step ratio and percent problems."

#### *Practice:*

1. Your friend goes to the store and buys a soda for \$1.50, a cookie for \$1.00, and a bag of pretzels for \$2.10. An additional 9% sales tax is added to the bill. What is the total cost?
    - a. \$4.60
    - b. \$5.01
    - c. \$5.14
    - d. \$0.41
  2. Jane refurbishes old furniture and sells it for a profit. She recently bought an antique bench for \$230. After sanding and resurfacing, she hopes to sell it for 25% more than she purchased it. What would be her profit after selling the bench?
    - a. \$287.50
    - b. \$57.00
    - c. \$57.50
    - d. \$172.50
  3. Kris buys a new polo that was on sale for 45% off. He only paid \$13.00. What was the original price of the polo?
    - a. \$23.64
    - b. \$5.85
    - c. \$7.15
    - d. \$28.89
  4. Leah goes to Buffalo Wild Wings for lunch. Her total bill was \$35.50. She wants to leave a tip that is 18% of the total bill. How much should she leave for the server? How much did she spend in all?
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**Learning Objective #2:**



**"Recognize and represent proportional relationships between quantities."**

**Practice:**

5. A climber is on a hike. After 2 hours he is at an altitude of 400 feet. After 6 hours he is at an altitude of 700 feet. What is the average rate of change?

- a. 200 feet per hour
- b. 150 feet per hour
- c. 75 feet per hour
- d. 117 feet per hour

6. A chef cooks 12 lbs of beef for 60 people and 18 lbs of beef for 90 people. Find the rate of change.

- a. 5 lbs of beef per person
- b. 1 lb of beef per 6 people
- c. 6 lbs of beef per person
- d. 1 lb of beef per 5 people

7. Annie earns \$320 for 8 hours of work. At that rate, how long would she have to work to earn \$1,120?

- a. 28 hours
- b. 40 hours
- c. 140 hours
- d. 100 hours

8. Find the rate of change for the following table:

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Time (min)	Distance (miles)
15	1
45	3
75	5
105	7

**Learning Objective # 3:**



**"Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale."**

**Practice:**

Use the table and scale below to answer questions 9 & 10.

Location	Map Distance	Actual Distance
Math Class to Office	6 cm	
Office to Nurse	2 cm	
Nurse to Library	9.5 cm	
Library to Lunch	5 cm	
Scale: 3 centimeters = 15 feet		

9. What is the actual distance from the library to lunch?

- a. 15 feet
- b. 25 feet
- c. 20 feet
- d. 30 feet


10. What is the actual distance from math class to the library if you have to follow the path shown above in the table?

- a. 87.5 feet
- b. 80 feet
- c. 45 feet
- d. 90 feet

11. Next weekend you are going to go hiking at Sabino Canyon. On the trail map you notice that it says that 1.5 centimeters equals 2 miles. If Telephone Line Trail is 9 centimeters on the map, how far is it in real life?

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**Learning Objective #4:**

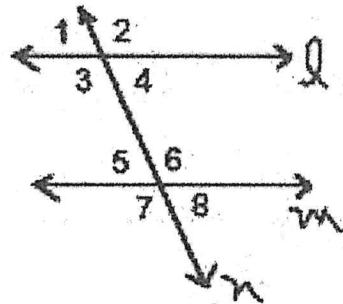
-  "Use facts about supplementary, complementary, vertical, and adjacent angles in multi-step problems to write and solve simple equations for an unknown angle in a figure."

*Practice:*

Use the diagram to answer questions 12 & 13.

12.  $\angle 2$  and  $\angle 6$  are \_\_\_\_\_ angles.

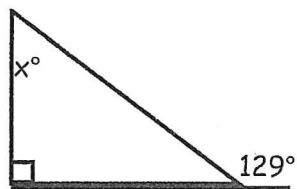
- a. vertical angles
- b. exterior angles
- c. interior angles
- d. corresponding angles



13. If  $\angle 1$  measure  $60^\circ$ , what does  $\angle 4$  measure?


- a.  $120^\circ$
- b.  $60^\circ$
- c.  $30^\circ$
- d.  $90^\circ$

14. What is the measurement of  $\angle x$ ?



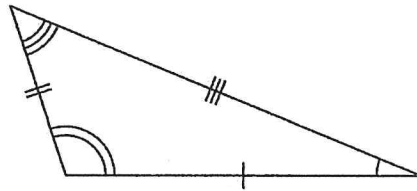
- a.  $39^\circ$
- b.  $51^\circ$
- c.  $49^\circ$
- d.  $59^\circ$

**Learning Objective #5:**

 "Draw geometric shapes with given conditions using a variety of methods. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle."

**Practice:**

15. Name this shape below:



- a. isosceles triangle
- b. right triangle
- c. scalene triangle
- d. acute triangle

16. Which type of triangle has three congruent angles? What does each angle measure?

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17. Which of the following lengths will NOT create a triangle?

- a. 16 cm, 9 cm, 9 cm
- b. 3 ft, 7 ft, 5 ft
- c. 2 cm, 2 cm, 2 cm
- d. 7 cm, 9 cm, 20 cm