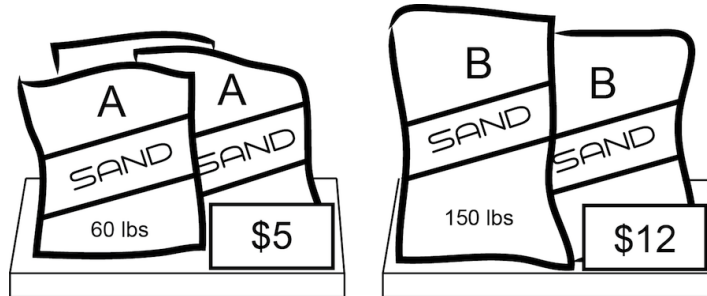


Name _____

Date _____

Summer Assignment 7th Grade

1. Alisa hopes to play beach volleyball in the Olympics someday. She has convinced her parents to allow her to set up a beach volleyball court in their backyard. A standard beach volleyball court is approximately 26 feet by 52 feet. She figures that she will need the sand to be one foot deep. She goes to the hardware store to shop for sand and sees the following signs on pallets containing bags of sand.



- a. What is the rate that Brand A is selling for? Give the rate and then specify the unit rate.
- b. Which brand is offering the better value? Explain your answer.
- 2) Your mother takes you to your grandparents' house for dinner. She drives 60 minutes at a constant speed of 40 miles per hour. She reaches the highway, quickly speeds up, and drives for another 30 minutes at constant speed of 70 miles per hour.
- a. How far did you and your mother travel altogether?
- b. How long did the trip take?

3) Loren and Julie have different part-time jobs after school. They are both paid at a constant rate of dollars per hour. The tables below show Loren and Julie's total income (amount earned) for working a given amount of time.

Loren

Hours	2	4	6	8	10	12	14	16	18
Dollars	18	36	54	72	90	108			162

Julie

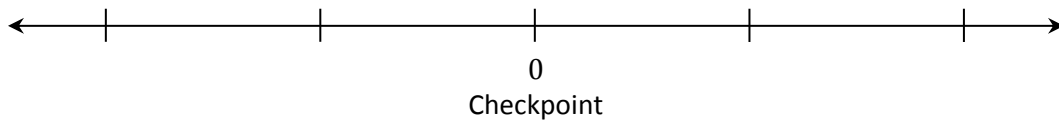
Hours	3	6	9	12	15	18	21	24	27
Dollars	36		108	144	180	216		288	324

- a. Find the missing values in the two tables above.
 - b. Who makes more per hour? Justify your answer.
 - c. Write how much Julie makes as a rate. What is the unit rate?
 - d. How much money would Julie earn for working 16 hours?
1. L.B. Johnson Middle School held a track and field event during the school year. The chess club sold various drink and snack items for the participants and the audience. Altogether, they sold 486 items that totaled \$2,673. If the chess club sold each item for the same price, calculate the price of each item.
 2. The PTA created a cross-country trail for the meet.
 - a. The PTA placed a trail marker in the ground every four hundred yards. Every nine hundred yards, the PTA set up a water station. What is the shortest distance a runner will have to run to see both a water station and trail marker at the same location?

3. A local park's programs committee is raising money by holding mountain bike races on a course through the park. During each race, a computer tracks the competitors' locations on the course using GPS tracking. The table shows how far each competitor is from a checkpoint.

Number	Competitor Name	Distance to Checkpoint
223	Florence	0.1 miles before
231	Mary	$\frac{2}{5}$ miles past
240	Rebecca	0.5 miles before
249	Lita	$\frac{1}{2}$ miles past
255	Nancy	$\frac{2}{10}$ miles before

- a. The checkpoint is represented by 0 on the number line. Locate and label points on the number line for the positions of each listed participant. Label the points using rational numbers.



- b. Which of the competitors is closest to the checkpoint? Explain.
- c. Two competitors are the same distance from the checkpoint. Are they in the same location? Explain.
- d. Who is closer to finishing the race, Nancy or Florence? Support your answer.

4. Mary manages a company that has been hired to flatten a plot of land. She took several elevation samples. The table below shows how some other elevation samples compare to the level of the road:

Elevation Sample	G	H	I	J	K	L
Elevation (ft. from the road)	3.1	-0.5	2.2	1.3	-4.5	-0.9

Write the values in the table in order from least to greatest.

_____ < _____ < _____ < _____ < _____ < _____

5. Andréa and Marta are testing three different coolers to see which keeps the coldest temperature. They placed a bag of ice in each cooler, closed the coolers, and then measured the air temperature inside each after 90 minutes. The temperatures are recorded in the table below:

Cooler	A	B	C
Temperature (°C)	-2.91	5.7	-4.3

Marta wrote the following inequality statement about the temperatures:

$$-4.3 < -2.91 < 5.7.$$

Andréa claims that Marta made a mistake in her statement and that the inequality statement should be written as

$$-2.91 < -4.3 < 5.7.$$

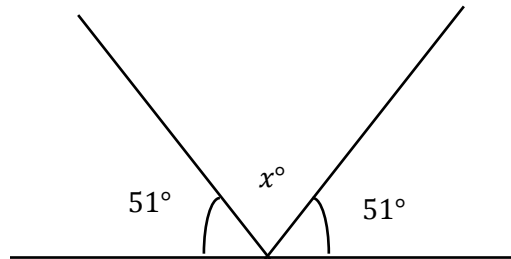
- a. Is either student correct? Explain.
- b. The students want to find a cooler that keeps the temperature inside the cooler more than 3 degrees below the freezing point of water (0°C) after 90 minutes. Indicate which of the tested coolers meets this goal, and explain why.

6. Gertrude is deciding which cell phone plan is the best deal for her to buy. Super Cell charges a monthly fee of \$10 and also charges \$0.15 per call. She makes a note that the equation is $M = 0.15C + 10$, where M is the monthly charge, in dollars, and C is the number of calls placed. Global Cellular has a plan with no monthly fee but charges \$0.25 per call. She makes a note that the equation is $M = 0.25C$, where M is the monthly charge, in dollars, and C is the number of calls placed. Both companies offer unlimited text messages.
- a. Make a table for both companies showing the cost of service, M , for making from 0 to 200 calls per month. Use multiples of 20.

Number of Calls, C	Cost of Services, M , in Dollars	
	Super Cell $M = 0.15C + 10$	Global Cellular $M = 0.25C$
20		
40		

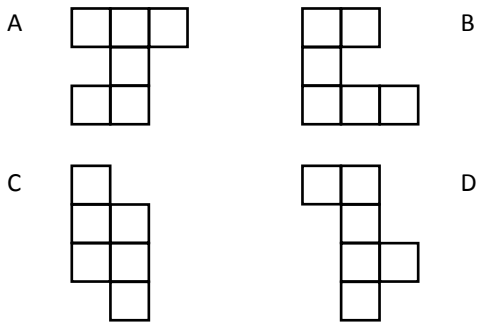
7. The elevator at the local mall has a weight limit of 1,800 pounds and requires that the maximum person allowance be no more than nine people.
- a. Let x represent the number of people. Write an inequality to describe the maximum allowance of people allowed in the elevator at one time.

8. For a science experiment, Kenneth reflects a beam off a mirror. He is measuring the missing angle created when the light reflects off the mirror. (Note: The figure is not drawn to scale and a straight line has 180 degrees.)

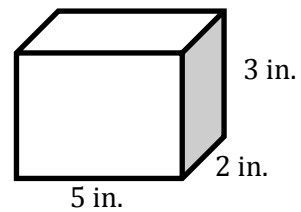
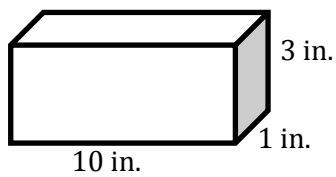


Use an equation to determine the missing angle, labeled x in the diagram.

9. Which of these nets can be folded to form a cube?



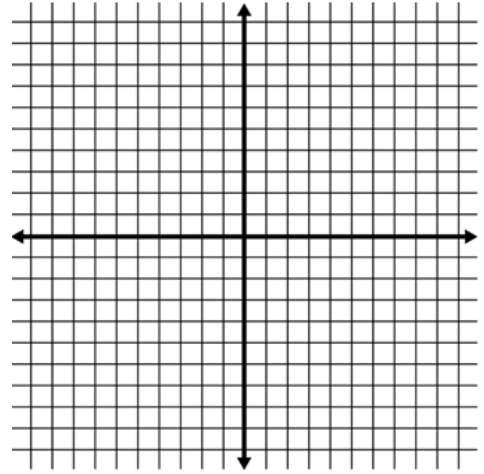
10. Which box below has the larger surface area?



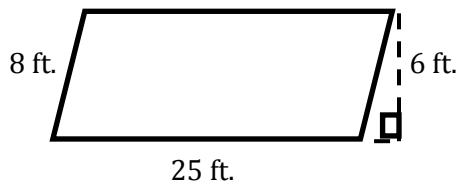
11. a. Draw a polygon in the coordinate plane using the given coordinates.

$(4, -4)$
 $(6, -2)$
 $(8, -6)$

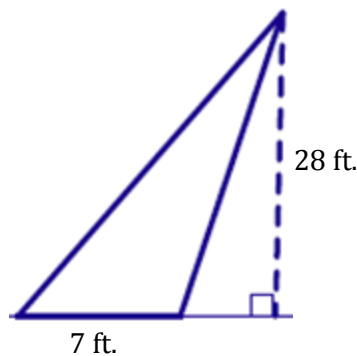
- b. Calculate the area of the polygon.



12. Eaglecrest Elementary School is creating a vegetable garden at the school.



- a. What is the area of the garden?
- b. After more discussion, Eaglecrest decided to change the location of the garden so that the vegetables can get more sunlight. Below is the new garden.



In which garden can Eaglecrest students plant more vegetables? Explain your reasoning.