

North Carolina Grade 8 Sample Open Response Test

1. Brandi lives due east of Julia. Julia lives due south of Eve. There is a bike path that connects all three houses to form a triangle.
 - a. Sketch a map of where these three friends live in relation to each other.
 - b. If Brandi lives 3 miles from Julia and Eve lives 5 miles from Brandi, how many miles is it from Julia's house to Eve's house? Explain your reasoning.
 - c. If the school is 8 miles due south of Eve, how many miles is the school from Brandi? Explain your reasoning.

Course 3, Lesson 6-3

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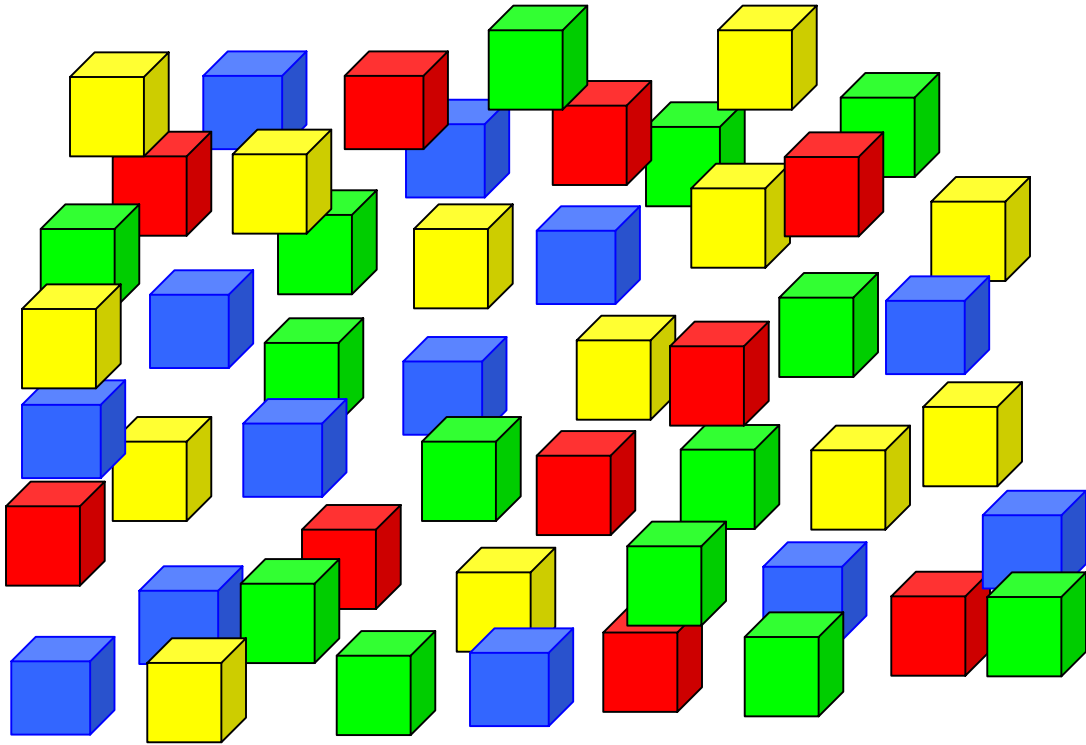
2. Coach Gray recorded his team's score and their opponent's score for each of the last 10 basketball games. The data is listed below.

Gray	55	72	66	95	55	63	54	58	61	51
Opponents	68	45	65	42	58	60	49	56	40	47

- a. Find the mean score for Coach Gray's team. Then find the mean score for the opponents. Identify any outliers in either set of data. How do these values affect the mean?
- b. Which value would be more representative of the scoring of Coach Gray's team: the mean, the median, or the mode? Explain your reasoning.
- c. Coach Gray's team won 8 out of 10 games. Can you say with certainty that next season the probability of winning a game will be 80%? Explain your answer.

Course 3, Lesson 4-3

3. Maria is performing an experiment in which a box is filled with the different colored blocks shown. If Maria randomly chooses one block from the box, which color or colors of blocks have the greatest probability of being chosen? Provide the work that shows how you arrived at your answer.



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4. Jeff is working at an appliance store to earn money to buy a \$940 computer system. Jeff's base salary is \$40 per day, and he also earns \$75 for every major appliance that he sells.

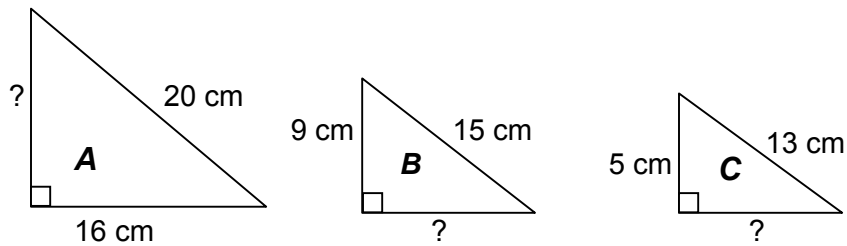
Jeff's father gives him a challenge: If Jeff earns enough in one day to buy the computer, his father will buy him a DVD player to go with the new computer.

Write and solve an equation to find the number of appliances Jeff needs to sell in one day to have enough money for his computer system. Provide the work that shows how you arrived at your answer.

Course 3, Lessons 10-4

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5. Ken drew three right triangles. Two of the triangles are similar.



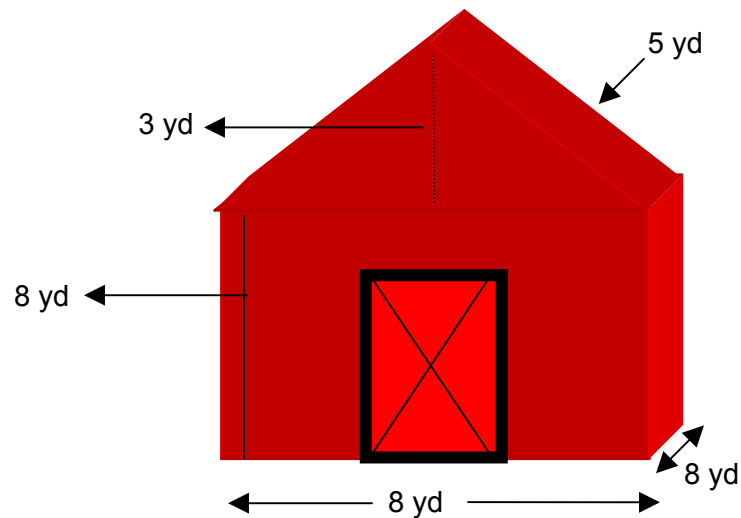
- A.** Find the missing side lengths. Which two triangles are similar?
- B.** Ken needs to draw another right triangle whose hypotenuse measures 30 cm and is similar to the other two similar triangles. Find the lengths of the two legs of this new triangle?

Course 3, Lessons 6-3 and 7-6

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6. Barry needs to paint the outside of his barn. Find the surface area of the outside of the barn to determine the number of gallons of paint needed to cover the barn's surface, and then find the approximate cost of the paint to be purchased. Use the diagram below to show how you found the surface area of the barn. Show all of your work.

- One gallon of paint will cover about 400 square feet.
- One gallon of paint costs \$22.99.



Course 3, Lesson 6-1 and 6-2