

SOAR: Student Prompt Book

GRADES
6 and Up

Ratios and Proportional Relationships

STUDENT PROMPT BOOK

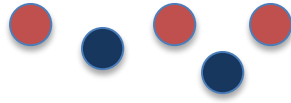
Ratios and Proportional Relationships

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Category I: Approaches to Solving Simple Contextual Ratio Situational Word Problems

2. Ricardo notices that the ratio of red houses (light grey) to blue houses (dark grey) on his street can be represented with the diagram below. If Ricardo's street has 20 houses and all are either red or blue, how many houses on his street are blue?



3. In Sarah's class, 1 out of 5 students did not turn in homework on Tuesday. If there are 30 students in Sarah's class on Tuesday, how many students *did* turn in homework?

4. You need to buy 24 cupcakes for your party tonight. You have \$6.00. Cindy's Bakery sells 3 cupcakes for \$1.00. Do you have enough money to buy 24 cupcakes? Explain why or why not.

5. Mr. Smith rides a motorcycle to school each day. He travels at a rate of 30 miles per hour.
- a. How long does it take him to get to school if the distance he travels is 10 miles?

- b. At that rate, how far will he be able to travel in 4 hours?

6. A map is drawn using a scale of 150 kilometers to 3 centimeters. The distance between Pittsburgh and Philadelphia is 500 kilometers. How far apart will the two cities be on the map?

7. 20% of the pizzas that Speedy Pizza Shop sells are sausage pizzas.

a. What is the ratio of sausage pizzas to all the pizzas sold today?

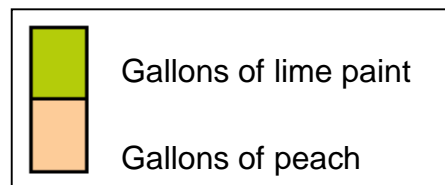
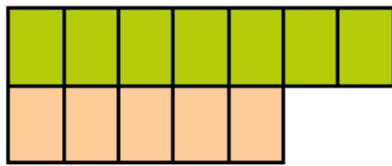
b. If the pizza shop sells 45 pizzas, how many of them are sausage?

8. What ratio is modeled in the diagrams below? Explain in words how you made your decision.

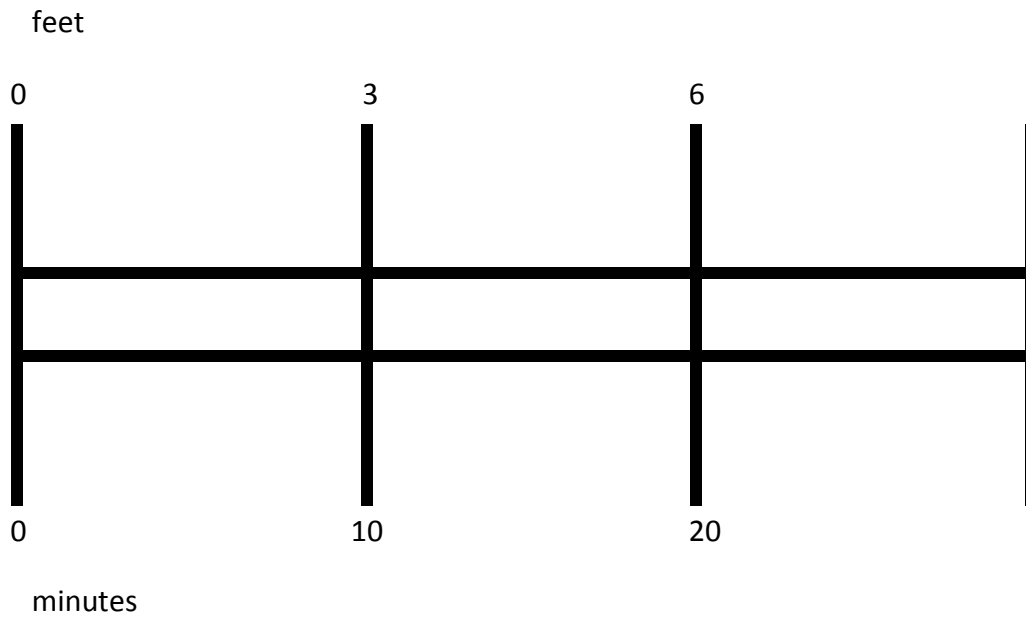
a.



b.



c.



d.



Shaded: Ounces of water

Unshaded: Ounces of juice

**Category II: Approaches to Solving Simple
Contextual Situational Word Problems Using
Proportional Reasoning**

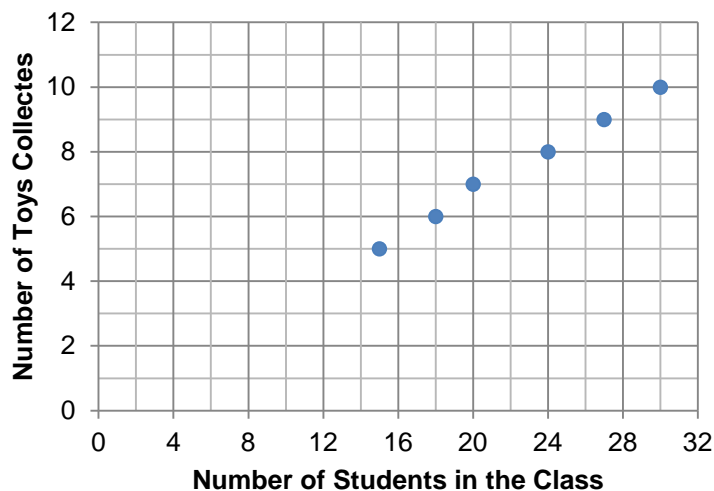
9. The table below contains ticket-buying data from 3 different classrooms. Is the relationship between the number of students who purchased tickets to the school dance and the total number of students in the class a proportional relationship? Justify your answer.

	Class A	Class B	Class C
Students who Purchased tickets	18	24	15
Total Number of Students	24	32	20

10. Trent gets thirsty when he mows lawns. He often buys 6 bottles of sports drink for \$9.36.
- At that price, how much does Trent pay for 1 bottle of sports drink?
 - If Trent wants to buy 21 bottles of sports drink, how much money will he need?
 - Write an equation to express the relationship between the number of bottles of sports drink he buys and the price he pays.

11. The graph below shows the number of toys that students in 6 middle school classes collected for charity.

Toy Drive



- a. Is the relationship between the number of students in the class and the number of toys collected a proportional relationship?
- b. If the relationship is proportional, write an equation that shows the relationship between the number of students in the class and the number of toys collected. If the relationship is not proportional, explain how you know.

12. It takes Lola 20 minutes to walk her dog $\frac{1}{2}$ mile. What is her walking rate in miles per hour?

13. Michael needs to buy a new pair of sneakers and his favorite style of sneakers normally cost \$75.00. There is a 20% discount on sneakers at the mall.
 - a. If he buys his favorite sneakers at the mall, how much money will he save?

 - b. How much will his sneakers cost at the discount price?