

# SOAR: Student Prompt Book

GRADES  
6 and Up

Ratios and Proportional Relationships

# STUDENT PROMPT BOOK

## Ratios and Proportional Relationships

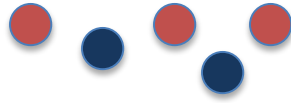
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## Category I: Approaches to Solving Simple Contextual Ratio Situational Word Problems



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?

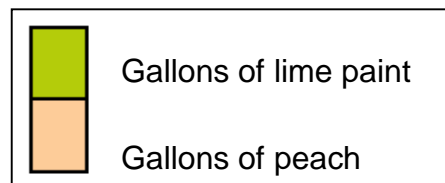
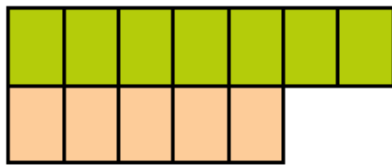


8. What ratio is modeled in the diagrams below? Explain in words how you made your decision.

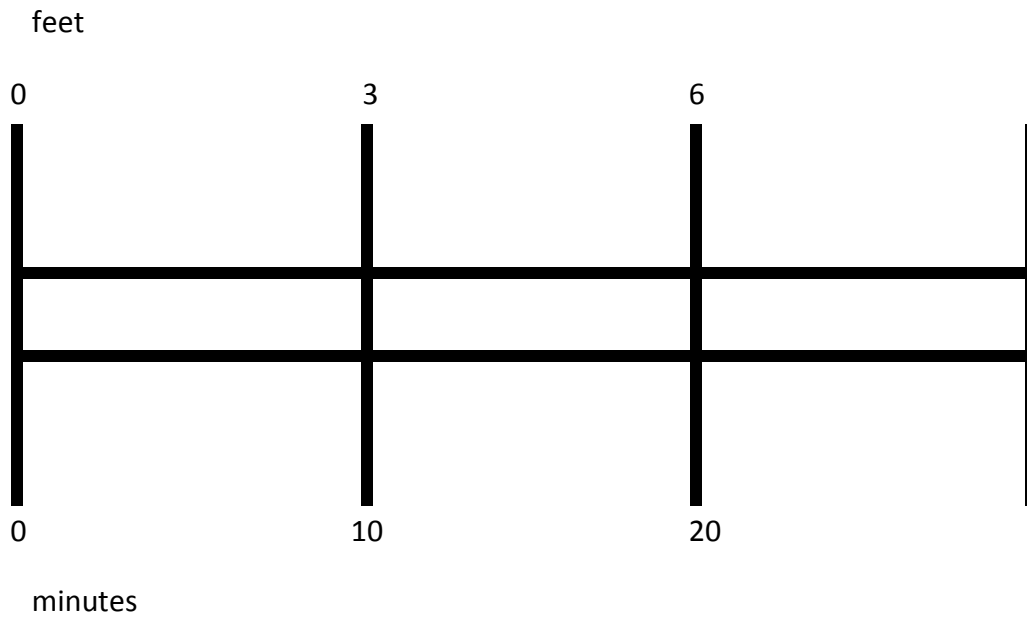
a.



b.



c.



d.



Shaded: Ounces of water

Unshaded: Ounces of juice

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

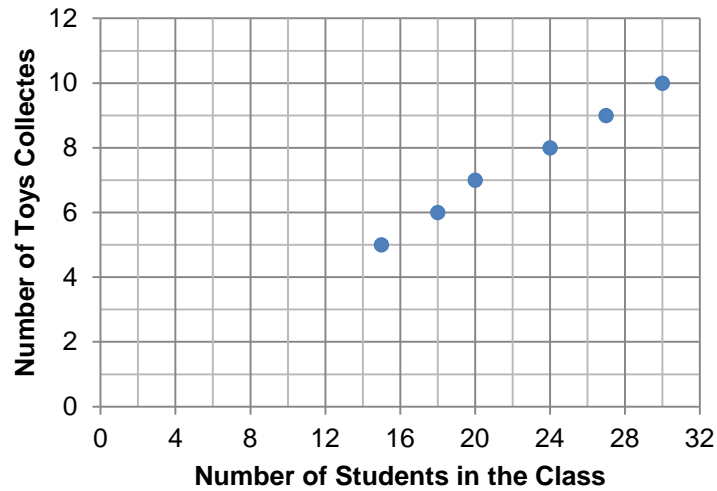
9. The table below contains ticket-buying data from 3 different classrooms. Is the relationship between the number of students who purchased tickets to the school dance and the total number of students in the class a proportional relationship? Justify your answer.

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



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?

