



Jakarta International
School
7th Grade

Name: _____

Date: _____

Practice Test - Green

Ratios, Proportions, Percents
and Probability

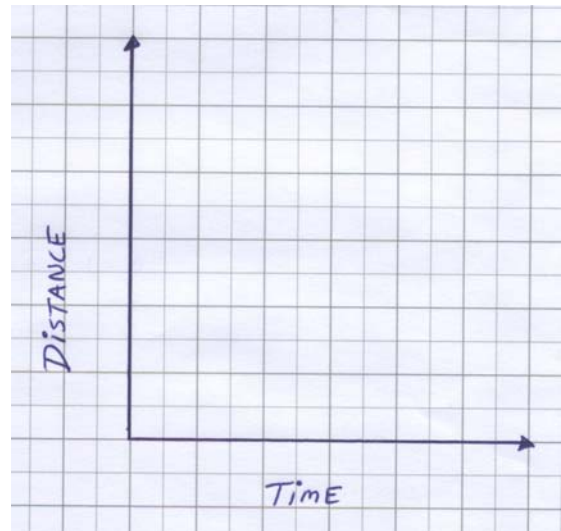
Score: $\frac{50}{\quad}$

50

Clearly show required work. Check Carefully! (2 points per answer)

1. When a car travels at a constant speed, the distance it travels is directly proportional to the time it has been travelling.

- A. A car drives 300 km in 6 hours. Graph the relationship between the distance and time that the car has travelled.



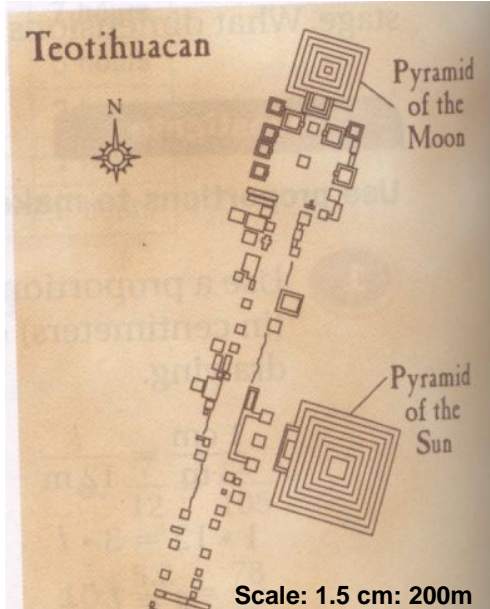
- B. Slope is a term used to describe the graph of a line. It is a ratio between 2 quantities that can be read from a graph. What are these 2 quantities?
- C. What is the slope of the line you graphed?
- D. What is the car's unit rate?
- E. Explain the relationship between slope and unit rate, using this situation as an example that demonstrates your understanding.

2. **NATURE** - As a tadpole, the paradoxical frog is 24 centimeters long. As an adult, the frog is 6 centimeters long.
- Write the ratio of the tadpole's length to the adult frog's length
 - Something is called paradoxical if it seems impossible. What is paradoxical about the frog? Explain using your answer to part a.
3. **SCIENCE and TECHNOLOGY** - Engineers designed a miniature robot that can crawl through pipes and vents that humans can't access. The robot travels 1 inch in 3 seconds. How many feet does the robot travel in 4 minutes? There are 12 inches in 1 foot.
4. **ROSES** - Three decorators purchased bouquets of roses. Decorator A paid \$120 for 5 bouquets that contained 25 roses each. Decorator B paid \$204 for 20 bouquets that contained 12 roses each. Decorator C paid \$180 for 40 bouquets that contained 6 roses each. Which decorator paid the least amount per rose?
5. Write a proportion and then solve. An elephant's heart beats 75 times in 3 minutes. It will beat 325 times in how many minutes?
6. What makes a good random sample? Use the following situations to support your answer.

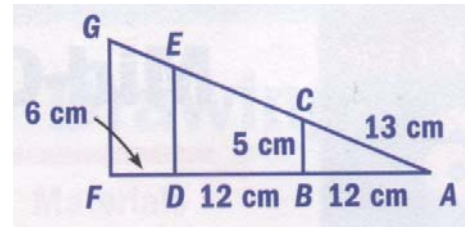
Situation A: You want to know how often teens rent videos. You plan to survey teens going into the local video rental store.

Situation B: You want to know the most popular breakfast cereal. You plan to survey every 5th person entering a grocery store.

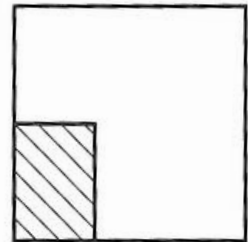
7. **ANCIENT CULTURE** - On a map that looks like the one pictured below, the center of Pyramid of the Sun is 4 centimeters from the center of the Pyramid of the Moon. What is the actual distance from the center of the Pyramid of the Sun to the center of the Pyramid of the Moon in real life? (change scale)



8. In the figure, $\triangle ABC$, $\triangle ADE$, and $\triangle AFG$ are all similar. Find DE and FG



9. The height of the shaded rectangle shown is one-half the height of the square, and the width of the rectangle is one-third the width of the square. If a point is chosen at random inside the square, what is the probability that it is also inside the rectangle? Express your answer as a common fraction.



10. In a bag there are 4 blue marbles, 2 white marbles, 3 red marbles and 3 green marbles. What is the probability that you will choose a white marble?
11. Is it possible for there to be a 1.3 probability that an event will occur? EXPLAIN.

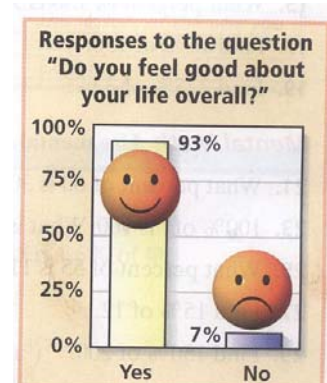
12. You roll a die and then toss a coin.
a) Record all of the possible outcomes.

b) What is the probability that you will roll an odd number, followed by a heads?

16. Write the following decimal as a percent 0.005

17. Write the following fraction as a percent $\frac{7}{16}$

18. The graph shows the results of a survey. There were 1023 people who answered yes. How many people were surveyed?



19. **Movies** Your friend paid \$9 for a movie ticket. This amount was 72% of the total amount your friend spent at the theatre. How much money did your friend spend?

20. Obammy is a baby orangutan who was born recently at Ragunan Zoo. When she was born, her mass was 3 kg. Find the percent of increase for each given period. Round to the nearest percent.

- a. After one month, Obammy had a mass of 4 kg.
b. After 10 years her predicted mass is 45 kg.



21. Nokia handphones are on sale in two different stores. In the first store, the sale price is 25% off the regular price of Rp. 1,500,000. In the second store, the sale price is 30% off the regular price of Rp. 1,750,000. Which is the better buy? Explain.