



Study Guide Open-ended Questions-7th grade Math 1st Semester

Subject: Mathematics

State: Alabama

Student Name:_____

Teacher Name:_____

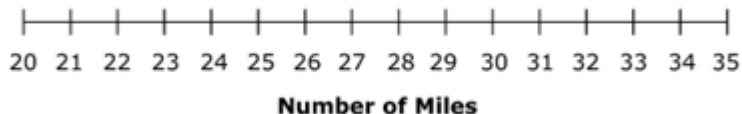
School Name:_____

- 1 Molly ran $\frac{2}{3}$ of a mile in 8 minutes. If Molly runs at that speed, how long will it take her to run one mile?

2 Justin's car can travel $77\frac{1}{2}$ miles with $3\frac{1}{10}$ gallons of gas.

Kim's car can travel $99\frac{1}{5}$ miles with $3\frac{1}{5}$ gallons of gas.

At these rates, find how far each car can travel on 1 gallon of gas. Show or explain how you found your answer. Then, draw and label points on the number line to show the number of miles each car can travel with one gallon of gas.



3 Rita gets paid \$16 per hour for the first 8 hours she works each day. She earns $1\frac{1}{2}$ times her hourly pay rate for time she works over 8 hours each day. Rita's work day for Monday is described in the list.

worked from 8:15 a.m. to 12:45 p.m.

took a 45-minute lunch break

worked until 6:15 p.m.

Rita does not get paid for her lunch break.

How much money did Rita earn for the time she worked on Monday? Show or explain all of the steps you used to determine your answer.

4 The three seventh grade classes at Sunview Middle School collected the most boxtops for a school fundraiser, and they won a \$600 prize to share among them. Mr. Aceves's class collected 3,760 box tops, Mrs. Baca's class collected 2,301, and Mr. Canyon's class collected 1,855. How should they divide the money so that each class gets the same fraction of the prize money as the fraction of the box tops that they collected? Explain your answer.

5 Jane and Eric are helping their teacher buy supplies for a research project. Every student will get a bag with 2 pencils and 30 index cards.

The teacher gave Jane \$17 to buy pencils from the school store. The pencils come in boxes of 12 and cost \$1.69 per box.

Eric was given \$19 to buy index cards at an office supply store. Index cards are sold in packs of 150 cards and cost \$2.99 per pack.

Each bag contains two pencils and 30 index cards. How much will each bag cost? Give your answer to the nearest cent. Show or explain how you found your answer.

- 6 Robert recorded the temperature outside his house in the table shown.

Time	Temperature ($^{\circ}\text{F}$)
4:00 p.m.	15
6:00 a.m.	-7

Robert claims the difference between the temperatures is 8 degrees.

- (a) Explain why Robert's claim is incorrect.
- (b) What is the correct difference in temperatures?

7 (a) Use long division to find the repeating decimal that represents $\frac{29}{13}$.

(b) Take the number obtained by including only the first two digits after the decimal, and multiply that by 13.

(c) Take the number obtained by including only the first four digits after the decimal, and multiply that by 13.

(d) Take the number obtained by including only the first six digits after the decimal, and multiply that by 13.

(e) What do you notice about the product of 13 and the decimal approximations of $\frac{29}{13}$ as more and more digits are included after the decimal point?

(f) How does what you observed in part (e) help make sense of what it means for $\frac{29}{13}$ to be equal to the repeating decimal expression you found in part (a)?