

MR

813

le Direct Mathematics Assessment

STUDENTS DO NOT WRITE IN THIS AREA

ROUND 1 **ROUND 2**

T: _____ R: _____ T: _____

MIG
ACM

before you begin. It is important that you use a calculator, show how you

- LE
- TI/
- AD
- Y

1. The Parker family is going fishing at Gospel Lakes outside of Grangeville, Idaho. They have to buy the following gear for their trip:

Tent	\$75.00
Lantern	\$40.00
Cooler	\$65.00
Fishing Tackle	\$25.00

a. The price of the cooler is what fraction of the total cost, tax NOT included? Show or explain how you found your answer.

$$75 + 40 + 65 + 25 = 205$$

$$\frac{65}{205} = \frac{13}{41}$$

The price of the cooler is $\frac{13}{41}$ of the total cost.

b. If the Parker's receive a 25% discount, what is the price of the gear, tax NOT included? Show or explain how you found your answer.

$$205 \cdot 0.25 = 51.25$$

$$75 \cdot 0.25 = 18.75$$

$$40 \cdot 0.25 = 10$$

$$65 \cdot 0.25 = 16.25$$

$$25 \cdot 0.25 = 6.25$$

$$18.75 + 10 + 16.25 + 6.25 = 51.25$$

If the Parkers got a 25% discount the price of the gear would be \$51.25.

Limited understanding.

c. What is their total cost for all of the gear plus 6% Idaho state sales tax? Show or explain how you found your answer.

$$75 + 40 + 65 + 25 = 205$$

$$205 \cdot 0.06 = 12.30$$

$$205.00 + 12.30 = 217.30$$

Their total cost including tax is \$217.30.

Proficient application of basic skills.

d. If the Parker's spend an additional \$300.00 for fuel, what percent of the total cost of the fishing trip is spent on fuel? Show or explain how you found your answer.

$$300 + 205 = 505$$

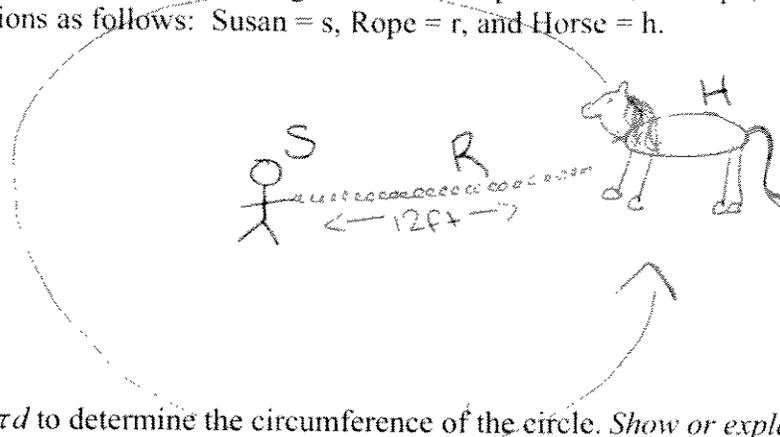
$$300 \div 505 \approx 59$$

The cost of fuel is $\approx 59\%$ of the total cost.

Use of advanced symbols.

2. Susan is exercising her horse. The horse is tied to a 12 ft. rope and trots in a circular path around her.

- a. Draw a picture in the space provided showing the relationship of Susan, the rope, and the path of the horse. Label the positions as follows: Susan = s, Rope = r, and Horse = h.



- b. Use the formula $C = \pi d$ to determine the circumference of the circle. Show or explain how you found your answer.

$$C = \pi d \quad 12 \cdot 2 = 24$$
$$d = 2r \quad 24 \cdot 3.14 = 75.36$$

$C = 75.36$

Advanced mathematical vocabulary, use of symbols, and communication skills.

Label is missing.

- c. Use the formula $A = \pi r^2$ to determine the area inside the circular path. Show or explain how you found your answer.

$$A = \pi r^2$$

$$12 \cdot 12 = 144$$

$$144 \cdot 3.14 = 452.16$$

$A = 452.16 \text{ ft}^2$

- d. What would happen to the area inside the circular path if the length of the rope is doubled? Show or explain how you found your answer.

$$12 \cdot 2 = 24$$

$$24 \cdot 24 = 576$$

$$576 \cdot 3.14 = 1808.64$$

Advanced understanding of the situation.

If the length of the rope were doubled the area would equal 1808.64 ft²

3. Your principal is doing a monthly drawing for reading. For each book read students may put one ticket in the box for the drawing. At the end of the month the principal announces that there are a total of 150 tickets in the box. Mike has 10 tickets in the box and his friend Chad has 14 tickets in the box.

a. What is the probability that Mike's ticket will be drawn? *Show or explain how you found your answer.*

$$\frac{10}{150} = \frac{1}{15}$$

$$10 \div 150 \approx 0.07$$

The Probability that Mike's ticket will be drawn is $\frac{1}{15}$ or 7% chance.

b. What percent of the total tickets are Mike's? *Show or explain how you found your answer.*

$$10 \div 150 \approx 0.07$$

The Percent of Total tickets that are Mike's is 7% of them.

c. What is the probability that the principal will pick Mike's or Chad's ticket first? *Show or explain how you found your answer.*

$$10 + 14 = 24$$

$$\frac{24}{150} = \frac{12}{75}$$

Demonstrates effective problem solving strategies.

$$12 \div 75 = .16$$

The probability that the principal will pick Mike or Chad's tickets is $\frac{12}{75}$ or 16% chance.

4. Benny borrowed \$60.00 from his sister Jenny. He agreed to pay her \$4.00 a week until the \$60.00 was repaid.

a. Write an **expression** to represent the amount of money Benny has left to pay after n weeks. *Show or explain how you found your answer.*

$$60 - (4 \cdot n) = m$$

n = weeks

m = money he still owes

b. How much money will Benny have left to pay after 9 weeks? *Show or explain how you found your answer.*

$$60 - (4 \cdot 9) = 24$$

After 9 weeks Benny would still owe Jenny \$24.00

Higher-order thinking skills.

c. If Benny agrees to pay Jenny an additional 18% of the loan, what will the total amount be that he repays Jenny? *Show or explain how you found your answer.*

$$60 \cdot .18 = 10.80 \quad 60 + 10.80 = 70.80$$

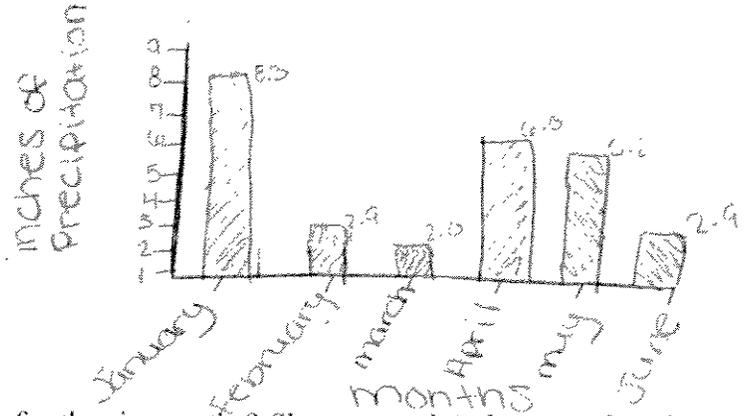
He would have to pay her a total of \$70.80.

Appropriate process accurately completed.

5. The Conservation Service measures precipitation and records their data. This table shows the monthly amounts of precipitation collected at High Mountain Ridge.

Recorded Precipitation	
Month	Precipitation
January	8.3 inches
February	2.9 inches
March	2.0 inches
April	6.0 inches
May	5.2 inches
June	2.9 inches

- a. Graph or plot the data from the table above.



- b. What are the mean, median, mode, and range for the six months? Show or explain how you found your answers.

mean = 4.55 $(8.3 + 2.9 + 2.0 + 6.0 + 5.2 + 2.9 = 27.3 / 6 = 4.55)$

median = none $(2.0, 2.9, 2.9, 5.2, 6.0, 8.3)$

Minimal or non-existent errors.

mode = 2.9 $(2.0, 2.9, 2.9, 5.2, 6.0, 8.3)$

range = 6.3 $(8.3 - 2.0 = 6.3)$

- c. Between which two months is the greatest decrease in rainfall? Show or explain how you found your answer.

January - February = 5.4

February - March = .9

~~March - April = 4.0~~

April - May = .8

May - June = 2.3

January had the greatest decrease in rainfall

Which prompt did you find to be the most difficult to solve? Why?

1 2 3 4 5

They were all pretty easy I just don't like working with percents.

Which prompt did you find to be the least difficult to solve? Why?

1 2 3 4 5

It was just basic stuff like drawing graphs finding mean, median, mode, range and differences, which are all things I've been doing since 4th grade.