

Task

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Overview

Picnic

Read, interpret, and
compare decimals.
Operate with
rational numbers.

Short Task

Task Description

Students are given a grocery store advertisement that lists various specials. They use the data to determine the cost per student to hold a picnic.

Assumed Mathematical Background

It is assumed that students have had experience operating with rational numbers.

Core Elements of Performance

- read, interpret, and compare decimals
- operate with rational numbers

Circumstances

Grouping: Students complete an individual written response.

Materials: No special materials are needed for this task.

Estimated time: 20 minutes

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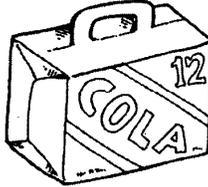
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Name _____

Date _____

Picnic

THURSDAY FOOD SECTION PICNIC SEASON AT FOODALL!



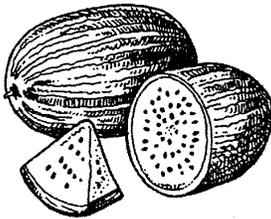
Cola 12-Pack \$3.20



Cola 6-Pack \$1.60

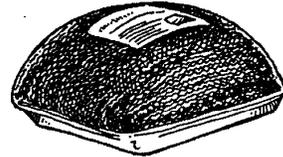


Cola 24-Pack \$4.24



Watermelon!!!
(Weight: approx. 7 pounds each)
First of the season . . . \$5.50 each!

Hamburger Meat:
\$1.49 per pound!
(Limit: 5 pounds per customer.
Additional: \$1.79 per pound)



Hamburger Buns
\$0.39 per package of 8



Middle Grades Package 2

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Name _____

Date _____

Picnic

This problem gives you the chance to

- *work with decimals to find the best price for an item*
- *use decimals, fractions, and percents to solve problems*

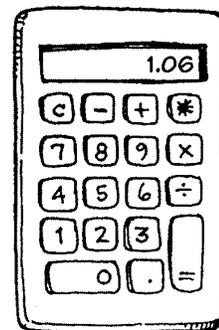
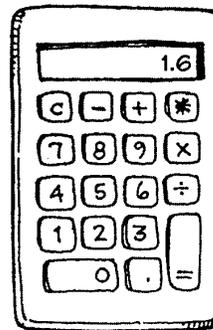
Mr. Miller's sixth-grade class is planning an end-of-year picnic. They use the given grocery store advertisement to help them make their plans. Chris and Luis agree to buy the food, if everyone shares the cost. In addition to sharing the cost of the food, Mr. Miller says he will bring the ketchup, mustard, napkins, paper plates, and cooking supplies.

Chris wants to see which cola packaging is the cheapest. Using the advertisement she writes:

The 6-pack is \$1.60.

The 12-pack is two 6-packs, so I divide \$3.20 by 2 on the calculator.

The 24-pack is four 6-packs, so I divide \$4.24 by 4 on the calculator.



Name _____

Date _____

1. Chris says, "The six pack costs \$1.60. The calculator indicates that the 12-pack costs 1.6 per 6-pack and the 24-pack costs 1.06 per 6-pack. I'm not sure which is the cheapest."

Write a short note to Chris explaining how the three cola packages compare. Tell Chris which is the best buy and explain why.

PICNIC MENU

- ✓ Hamburger on a bun
- ✓ Watermelon
- ✓ Can of soda

2. Mr. Miller says, "Plan on a quarter pound of hamburger per person." Luis says, "One seven-pound watermelon will serve 12 to 15 people." Chris says, "There are 21 people in the class, including Mr. Miller and us."

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Name

Date

How much money should Chris and Luis collect for food from each student (including themselves) and Mr. Miller? Use the food advertisement and show all your work.

3. Chris's mom finds a coupon for 5% off a grocery bill from Foodall. If Chris and Luis use this coupon, how much will they now need to collect from each person for the picnic. Explain how you found your answer.

A Sample Solution

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1. Chris,

The 24-pack is the best buy since the price per 6-pack is lowest. The 12-pack and 6-pack each cost \$1.60 per 6 cans while the 24-pack costs \$1.06 per 6 cans. When the calculator shows "1.6," that means \$1.60.

2. Cost of hamburger:

$(0.25 \text{ lb per person})(21 \text{ people}) = 5.25 \text{ lbs}$
 $[5 \text{ lbs at } \$1.49 \text{ per lb} = \$7.45] + [0.25 \text{ lbs} \times \$1.79 \text{ per lb} = \$0.4475,$
 or $\$0.45] = \7.90

Cost of buns:

Buns cost \$0.39 for a package of 8. Three packages will be needed for 21 people $(\$0.39 \text{ per package})(3 \text{ packages}) = \$1.17.$

Cost of watermelon:

If one watermelon serves 12 to 15 people, then two watermelons are enough for 21 people. $(2 \text{ watermelons})(\$5.50 \text{ per watermelon}) = \11.00

Cost of soda:

We'll buy a 24-pack since it's the best buy. One 24-pack costs \$4.24.

Total cost of the food is $\$7.90 + \$1.17 + \$11 + \$4.24 = \$24.31.$

$\$24.31 \div 21 \text{ people} = \$1.157619 \text{ per person.}$ This number needs to be rounded to \$1.16 per person, so we have enough money.

3. **Method 1:** Our savings is 5% of $\$24.31 = \1.2155 (which needs to be rounded to \$1.22). Our new total cost of food is $\$24.31 - \$1.22 = \$23.09.$ The new cost per person is $\$23.09 \div 21 \text{ people} \approx \1.10 per person (again, rounded to the nearest whole cent). *OR,* we can calculate the discount per person: 5% of \$1.16 per person = $\$0.058 \approx \$0.06.$ The discounted cost per person is $\$1.16 - \$0.06 \approx \$1.10.$

Method 2: A coupon of 5% means we only have to pay 95% of original bill. $(\$24.31)(0.95) = \23.09 total, $\$23.09 \div 21 \text{ people} \approx \1.10 per person. *OR,* the cost per person is 95% of original cost per person: $(\$1.16 \text{ per person})(0.95) \approx \1.10 per person.

Some students may suggest collecting an "easier" amount of money, for example, \$1.20 instead of \$1.16. The use of the extra money could be discussed.

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Using this Task

Task

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For Formal Assessment

After handing out the task to the students, review the aims of the assessment in the box at the top of the activity page. Because this task is short and straightforward, it would be appropriate to simply hand out the task and leave students to read and answer the questions individually.

Issues for Classroom Use

Some areas charge tax on food or beverages or charge a deposit on cans. If this is true in your community these additional costs may change how students respond to the task questions. It is appropriate for students to account for these costs in their solutions.

Picnic

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