



Does Longer Distance Really Equal Better Price?

MM2P1. Students will solve problems (using appropriate technology).

- Build new mathematical knowledge through problem solving.
- Solve problems that arise in mathematics and in other contexts.
- Apply and adapt a variety of appropriate strategies to solve problems.
- Monitor and reflect on the process of mathematical problem solving.

Does it really save money to drive 13 extra miles to save \$.09 per gallon if your car gets 26 mpg?

Assume you spend \$40 per week in gas to fill a 12 gallon gas tank. How much money do you save (if any) if you drive to a gas station 13 miles out of your way.

- 26 extra miles per week
- Assume you are spending \$3.33 per gallon.
- Using an extra gallon of gas each week (\$3.33) to save (\$1.08).

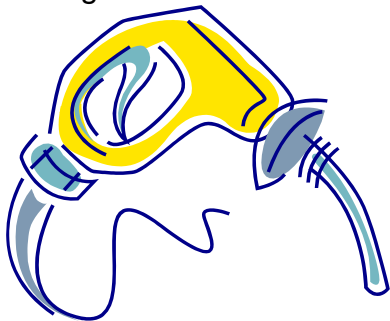
Solution: NO! You aren't saving any money! See below.

26 miles driven equals 1 gallon of gas. 1 gallon of gas equals \$3.33 regularly, or \$3.24 at the discounted price. At the regular price, you are spending \$39.96 for 12 gallons. To fill the tank at \$3.24 per gallon will cost you \$38.88. You are only saving a total of \$1.08 if you purchase 12 gallons of gas at the discounted price.

How much do you really save?

Assume you normally spend \$3.33 per gallon at the gas station and you fill your 16 gallon tank one week. How much are you really saving by driving to a gas station that offers gas at \$3.30 per gallon? \$3.25 per gallon?

Find the values for weekly, monthly (4 week month), and yearly (52 weeks) savings.



Weekly: \$3.33 - \$53.28
 \$3.30 - \$52.80 (\$.48 savings)
 \$3.25 - \$52.00 (\$1.28 savings)

Monthly: \$3.33 - \$213.12
 \$3.30 - \$211.20 (\$1.92 savings)
 \$3.25 - \$208.00 (\$5.12 savings)

Yearly: \$3.33 - \$2770.56
 \$3.30 - \$2745.60 (\$24.96 savings)
 \$3.25 - \$2704.00 (\$66.56 savings)