

NAME: _____

P.I. A.N.5: Solve algebraic problems arising from situations that involve percents (increase)

1. What percent of the time do you spend eating? Describe the method you used to find this percent.
2. Explain how to use mental math to find 20% of a given amount. Give an example.
3. Kelsey's family owns a property with dimensions of 99 ft by 114 ft. Her house occupies a base area of 72 ft by 66 ft. Describe how you would determine your estimate of the portion of the total property area occupied by the house. Give your estimate as a percent.

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4. You just paid \$42.40, including tax, for your cousin's birthday present. Explain your procedure for determining the retail price for this gift if you know that you were charged 6% sales tax.
5. Anne has a \$2,500 bank account which earns 7% interest. She also has a \$1,000 balance on her credit card account which charges 18%. What advice could you give to Anne that would benefit her current finances? Explain.
6. Use any problem solving strategy to solve the following problem.
Maria said that the percent increase in her test average after the last test was the same as the score on her last test. How can this be?

[1] Answers may vary. Sample: 12.5%; I spend about 3 hours a day eating, which is $\frac{3}{24}$ or 12.5%.

[2] Answers may vary. Sample: Find 10% of the given amount and multiply by 2. For example, to find 20% of 30, find 10% of 30 = 3 and multiply by 2 to get 6.

[3] The total area is 99 ft by 114 ft, or 11,286 ft². The house occupies 72 ft × 66 ft, or 4,752 ft². The house occupies $\frac{4,752}{11,286}$ of the property, or 42%.

If \$42.40 is the price of the item plus 6% tax, this would be represented as $\frac{106}{100}$. To determine the retail price, the proportion would be $\frac{106}{100} = \frac{\$42.40}{n}$. Although not necessary in the answer, the solution is $n =$
[4] \$40.

On an annual basis, Anne would earn \$175 from her bank account and pay \$180 on her credit card account. The net result is a payment of \$5.00. Good advice to her is to pay her credit card balance with money in her bank account. If she does this, she is left with a \$1,500 bank balance, which would earn
[5] \$105 annually.

[6] The last test is the only test she has taken.
