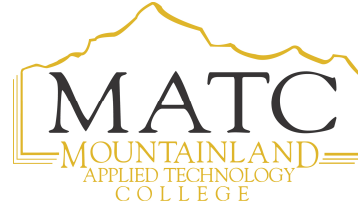


Percentages



This sheet is designed as a review aid. If you have not previously studied this concept or after reviewing the contents you still don't pass you should enroll in the appropriate math class.

To calculate a percentage:

1. Convert the percent to a decimal by moving the decimal point 2 places to the left.

$$0.1\% = .001, \quad 6.5\% = .065, \quad 25\% = .25, \quad 132\% = 1.32$$

2. Work the problem with the decimal equivalent in the percent place.

Samples:

An item is priced at \$2.59 and tax is 6.7%. What is the total cost of the item?

$$\begin{aligned} 6.7\% &= .067 && \text{(converting \% to a decimal)} \\ \$2.59 \times .067 &= .17 && \text{(tax - rounded to the nearest penny)} \\ \$2.59 + .17 &= \$2.76 && \text{(total cost of the item)} \end{aligned}$$

A shirt cost a retailer \$6.00. He marks it up 50% for retail. Today is a sale of 20% off everything in the store. What is the sale price of the shirt.

Convert all percents to decimal and follow the steps below:

$$\begin{aligned} \$6.00 \times .50 &= \$3.00 && \text{mark up.} \\ \$6.00 + \$3.00 &= \$9.00 && \text{retail price.} \\ \$9.00 \times .20 &= \$1.80 && \text{mark down for sale.} \\ \$9.00 - \$1.80 &= \$7.20 && \text{sale price (answer)} \end{aligned}$$

Phillip charged \$400 worth of goods on his credit card. On his first bill, he was not charged any interest, and he made a payment of \$20. He then charged another \$18 worth of goods. On his second bill a month later, he was charged 2% interest on his entire unpaid balance. How much interest was Phillip Charged on his bill?

$$\begin{aligned} \$400 - \$20 &= \$380 && \text{First bill minus first payment equals new balance.} \\ \$380 + \$18 &= \$398 && \text{New balance plus additional charges equal new balance.} \\ 2\% &= .02 && \\ \$398 \times .02 &= \$7.96 && \text{Interest charged (answer).} \end{aligned}$$

A common error:

When a number is reduced by a certain percent and the result increased by the same percent the final answer is often mistaken as being the same as the first number. This is not true.

A Lecture class has 100 students enrolled in the first term. The number of students decreases by 10% in the second term. In the third term the number increases by 10%.

$$\begin{array}{l} 100 - 10\% = 90 \quad 90 \text{ in the second term.} \quad 90 + 10\% = 99 \quad 99 \text{ in the third term.} \\ 100 - 10 = 90 \quad \quad \quad 90 + 9 = 99 \end{array}$$