Assignment

Write

Write a definition for each in your own words. Provide an example for each definition.

1. sales tax
2. income tax

Remember
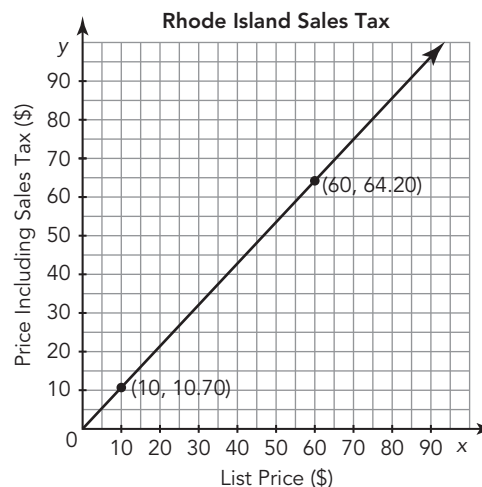
When calculating the total cost of a good or service that includes sales tax ($x\%$) multiplying the list price by $(1 + x\%)$ is the same as adding the sales tax ($x\%$) to the list price.

Practice

1. Three friends live in three different states. Monica lives in Rhode Island, Anthony lives in Ohio, and Thomas lives in Colorado.

Colorado Sales Tax	
List Price ($)	**Price Including Sales Tax ($)**
3.50	3.60
8.75	9.00
10.99	11.31

Ohio Sales Tax
$y = 1.055x$, where x is the sales price in dollars and y is the price including sales tax, in dollars.

Rhode Island Sales Tax

Graph with x-axis "List Price ($)" from 0 to 90 and y-axis "Price Including Sales Tax ($)" from 0 to 90. A line passes through points $(10, 10.70)$ and $(60, 64.20)$.
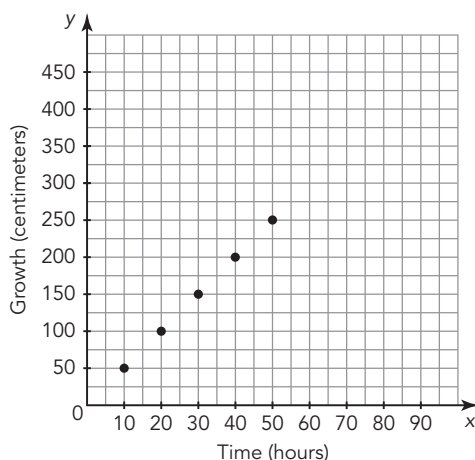
a. Determine the sales tax rate in each state. Show your work.

b. All three friends want to purchase the same gaming system so they can play games together. The list price of the gaming system is $349.99. How much will each friend pay for the gaming system?

2. Jesse earned a total of $75,000 this year. He lives in the District of Columbia where the local income tax rate is 8.5% for all incomes over $40,000.

a. How much will Jesse pay in income tax?

b. How much money will Jesse have after paying his income tax?

Stretch

In 2015, a person working in the United States paid 10% income tax for income up to $9225. Income between $9226 and $37,450 was taxed at 15%. Suppose John earns $9225. How much of his earnings does John take home after taxes? If he were to get a raise, and John's entire check was taxed at 15%, how much more would he need to earn to take home more than his current take-home pay?

Review

1. Determine each total cost, including a 20% tip, for the following bill amounts. Round to the nearest penny.

   a. $45.80

   b. $103.65

2. The graph shows how many centimeters a bamboo plant can grow and the number of hours that the plant has been growing. Determine the constant of proportionality and explain what it means.

3. In the middle school and high school jazz bands, the number of girls is proportional to the total members. Write a constant of proportionality for this situation and explain what it means.

Jazz Band	Number of Girls	Total Members
Middle School	6	15
High School	8	20

4. Write each as a unit rate.

   a. $180 in 5 hours

   b. $1 in tax for $20 spent