

Name _____ Date _____

**Skills Maintenance**

$$y = mx + b$$

Activity 1

Use the form $y = mx + b$ to write a function for each problem. Remember, m is the slope and b is the y -intercept.

1. Write the equation for the function where the slope is -2 and the y -intercept is 5 .

2. Write the equation for the function where the slope is -1 and the y -intercept is 0 .

3. Write the equation for the function where the slope is 1 and the y -intercept is 1 .

4. Write the equation for the function where the slope is 0 and the y -intercept is 2 .



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**Apply Skills****Algebraic Equations and Functions****Activity 1**

Suppose you rent a car from Dented Rentals. The base charge is \$20, plus 25 cents per mile. The equation for this function looks like this: $y = 0.25x + 20$. Each problem gives you a total charge amount for different scenarios. Find the amount of miles you have to drive to reach each amount.

1. The total amount you owe Dented Rentals is \$140. Here is the equation: $140 = 0.25x + 20$. How many miles did you travel?

Show your work here:

2. The total amount you owe Dented Rentals is \$200. Here is the equation: $200 = 0.25x + 20$. How many miles did you travel?

Show your work here:

3. The total amount you owe Dented Rentals is \$380. Here is the equation: $380 = 0.25x + 20$. How many miles did you travel?

Show your work here:

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Problem-Solving Activity

More Graphs of Linear Functions

Write the word problems in $y = mx + b$ form, then solve algebraically.

Remember the four steps for solving these kinds of problems:

Step 1: Decide what is changing and what is staying the same.

Step 2: Find what each variable represents in the function.

Step 3: Substitute numbers for the variables in the function.

Step 4: Solve the equation.

1. Juliana sells programs at baseball games. She makes \$5 per night and \$2 for every program she sells. At the end of Thursday night, she made \$37. How many programs did she sell?

2. A carpet cleaning service charges a base fee of \$10 to clean carpets, then \$2 for every square yard. The bill to clean the house was \$58. How many square yards did the service clean?

3. A wagon is used to move boxes around the warehouse. The wagon weighs 40 pounds and each box weighs 5 pounds. After Cesar stacked the wagon with boxes, the wagon and the boxes weighed 95 pounds. How many boxes did Cesar stack on the wagon?



Reinforce Understanding

Use the mBook *Study Guide* to review lesson concepts.