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Activity 1.2.1 Function Review

1. Evaluate the following functions for the values defined below. Remember the meaning of function notation: f(x) does **not** mean *f* times *x*.

a.
$$f(x) = 4 + x$$
 for $x = -6, 0, and 10$
b. $f(x) = -5x + 3$ for $x = -9, -1, and 3$

c. $g(h) = h^2 - 3h + 5$ for h = -4, 6, and 12 d. $c(d) = -\frac{3}{4}d + 5$ for d = -16, -4, and 24

2. Josh worked at day camp over the summer and earned \$8.00 per hour. Complete the table below and create a graph that represents the relationship the two variables. Label and scale the axes.

Hours Worked	Total Pay (dollars)
10	
15	
	160
25	
	240

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3. Complete the table below. For each function, give the natural domain of the function as the domain.

a. $f(x) = -3x + 2$	b. $f(x) = 0.5x^2 - 2x + 5$	c. $f(x) = \sqrt{x}$
Domain:	Domain:	Domain:
Range:	Range:	Range:

4. Write the domain and range of each of the following functions.

a.	Name	Jack	Simone	Trish	Peter
	Birthday	Nov. 7	Jan. 3	Jul. 4	Sept. 9

- b. $\{(4,3), (-8,0), (-20,-6), (18,7.5), (0,1)\}$
- c. David's Growth Chart

Age (years)	0	3	6	9	12
Height (inches)	21	38	45	54	63

5. The table below shows the diameter and circumference of five circles.

Diameter	Circumference
2	2π
3	3 π
4	4π
5	5π
6	6π

- a. Represent the data as ordered pairs.
- b. Graph the ordered pairs listed above. Label and scale the axes.



c. Write a verbal description of this function.

d. Write an equation that represents this function.

6. Thomas bought a new car yesterday for \$20,000. He learned that the car depreciates 15% of its value each year (that is, the value decreases by 15% each year). How much will his car be worth in 6 years?

Hint: The decay or depreciation function can be written $f(x) = ab^x$, where a = the initial value, b = the decay factor (which is 1 – percent decrease per year,) and x = number of years that the price has decreased.

- a. Write an equation that models the amount that Thomas' car will depreciate in *x* years.
- b. Make a table of ordered pairs that satisfy the equation in Part a. Graph the function by graphing the ordered pairs first, then drawing a smooth curve between the points.

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- 7. The function $f(c) = \frac{9}{5}c + 32$ describes a real-world relationship.
 - a. Make a table of ordered pairs that satisfy the function. Graph the function by graphing the ordered pairs first, then drawing a smooth line between the points.

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