

1. Given the function f defined by the formula $f(x) = 2x + 1$ find the following:

(a) $f(4)$ (b) $f(-5)$ (c) $f\left(\frac{1}{2}\right)$

2. Given the function g defined by the formula $g(x) = \frac{x-5}{2}$ find the following:

(a) $g(9)$ (b) $g(0)$ (c) $g(3)$

3. Given the function f defined by the formula $f(x) = x^2 - 4$ find the following:

(a) $f(-4)$ (b) $f(0)$ (c) $f(-2)$

4. If the function $f(x)$ is defined by $f(x) = \frac{x}{2} - 6$ then which of the following is the value of $f(10)$?

(1) -1 (2) 2 (3) 14 (4) 7

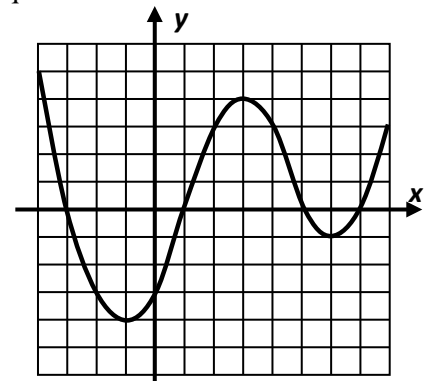
5. Based on the graph of the function $y = g(x)$ shown below, answer the following questions.

(a) Evaluate each of the following. Illustrate with a point on the graph.

$g(-2) =$ $g(3) =$ $g(0) =$ $g(7) =$

(b) What values of x solve the equation $g(x) = 0$? These are called the **zeroes of the function**

(c) How many values of x solve the equation $g(x) = 2$? How can you illustrate your answer on the graph? Remember, we are not looking for the exact x -values, only **how many solutions**.



6. Physics students drop a ball from the top of a 100 foot high building and model its height above the ground as a function of time with the equation $h(t) = 100 - 16t^2$. The height, h , is measured in feet and time, t , is measured in seconds. Be careful with all calculations in this problems and remember to do the exponent (squaring) first.

(a) Find the value of $h(0)$. Include proper units. What does this output represent? Reread the problem if necessary.

(b) Calculate $h(2)$. Does our equation predict that the ball has hit the ground at 2 seconds? Explain.

7. If you knew that $f(-4) = 8$, then what (x, y) coordinate point must lie on the graph of $y = f(x)$? Explain your thinking.

R1. Order the following from least to greatest $-6, 4.3, \sqrt{20}, -\frac{59}{9}$

R2. Simplify: $3(2x + 5) - (x + 10)$

R3. Which equation illustrates the associative property?

1. $x + y + x = x + y + z$

2. $x(y + z) = xy + xz$

3. $x + y + z = z + y + x$

4. $(x + y) + z = x + (y + z)$

R4. Which number is a perfect square: (1) 12 (2) 49 (3) 50 (4) 80

R5. If g represents Greg's age and his daughter is 4 years less than one half his age, then write an expression for his daughter's age in terms of the variable g .

R6. Write the inequality that is represented by the graph:



1. (a) 9
(b) -9
(c) 2

6. (a) At 0 seconds the height is 100 feet.
(b) At 2 seconds the height is 36 feet, so it is not on the ground.

2. (a) 2
(b) -2.5
(c) -1

7. $(-4, 8)$ -4 is the "x" (input) and 8 is the "y" (output)

3. (a) 12
(b) -4
(c) 0

4. (1) -1

5. (a) $g(-2) = -3$
 $g(3) = 4$
 $g(0) = -3$
 $g(7) = 0$

R1. $-\frac{59}{9}, -6, 4.3, \sqrt{20}$

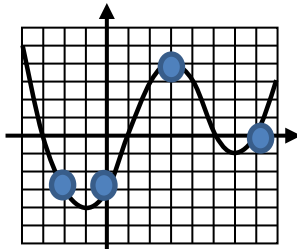
R2. $5x + 5$

R3. 4

R4. 2

R5. $\frac{1}{2}g - 4$ or $\frac{g}{2} - 4$

R6. $x \geq 5$



- (b) -3, 1, 5, 7
(c) 4 solutions

