For each function, find the indicated values.

1. *Given:* $h(t) = 2t - 5$

a. $h(-4) =$ -13 b. $h(t) = 23$, $t =$ 14 c. $h(13) =$ 21 d. $h(t) = -33$, $t =$ -14

plug in

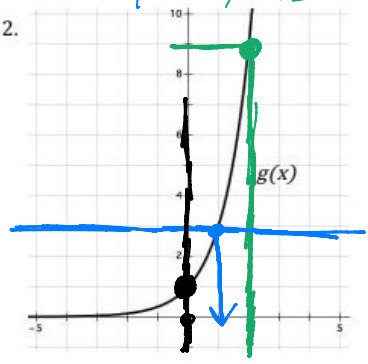
t=-4 2(-4)-5 plug in

2t-5=23 +5 +5

2(13)-5

2t-5=-33

2.



X=2

a. $g(2) =$ 9

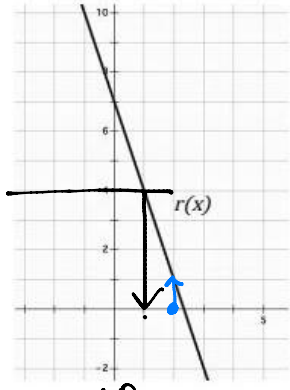
y=3

b. $g(x) = 3$, $x =$ 1

X=0

c. $g(0) =$ 1

3.



a. $r(-1) =$ 10

b. $r(x) = 4$, $x =$ 1

c. $r(2) =$ 1

4) Given the following equations, perform the operations that are required.

$f(x) = 4x - 1$ $g(x) = \frac{1}{2}x^2 + 4$ $h(x) = -3$ $j(x) = -3x + 5$

a. f(-1) + j(2)

4(-1)-1 + -3(2)+5

-6

b. f(0) – h(0)

4(0)-1-(-3)

2

c. j(x) = -4, what does x = 3

-4=-3x+5

-5 -5

-9=-3x

-3 -3

X=3

d. f(x) + j(x)

4x-1 + -3x+5

1x+4

e. j(x) – f(x)

-3x+5 - (4x-1)

-3x+5-4x+1

-7x+6

f. f(x) = 7, what does x = 2

4x-1=7

+1 +1

4x=8

4 4

X=2

g. f(x) = -5, what does x =

4x-1=-5

+1 +1

4x=-4

4 4

X=-1

h. h(x)*j(x)

-3(-3x+5)

9x-15

5. Use the graph to answer the following questions.

a. Where does $f(x) = g(x)$?

(2,5)

b. What is $f(4) + g(4)$? → X=4

7 + 6 = 13

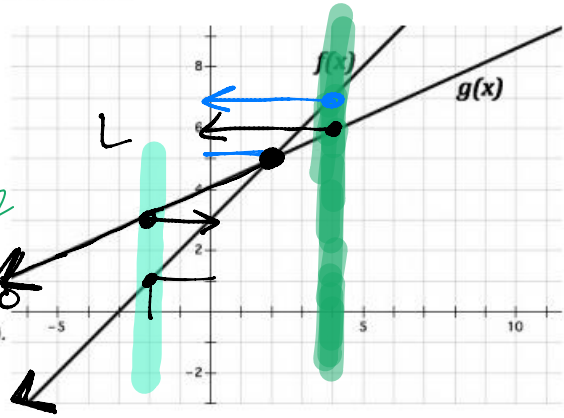
c. What is $g(-2) - f(-2)$? → X=-2

3 - 1 = 2

d. State the interval where $g(x) > f(x)$.

above
on top

$(-\infty, 2)$ only X



6. Use the graph to answer the following questions.

a. Where is $r(x) > h(x)$?

$(-\infty, 2.3)$

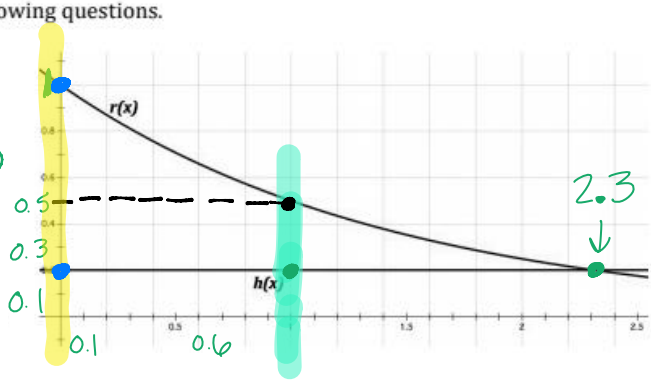
b. What is $r(1) - h(1)$? → X=1

0.5 − 0.2 = 0.30

c. What is $r(0) + h(0)$?

1 + 0.2

1.2



7. How do you know if something is a function or not? Explain for the following examples.

a. Table

Number of gumballs	Cost
5	10¢
10	20¢
15	30¢
20	40¢

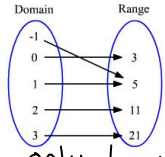
X Values Do not repeat

b. Scenario

Susan puts exactly $5 a week into her piggy bank. She starts with $14 and wants to see how much she can save if she doesn't ever spend it.

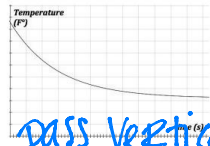
X-Values Don't repeat → time Does not repeat

c. Mapping



only 1 arrow from each X-value

d. Graph

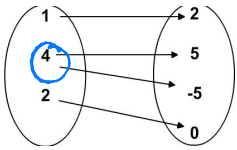


pass Vertical Line test

**Be sure you EXPLAIN in WORDS!

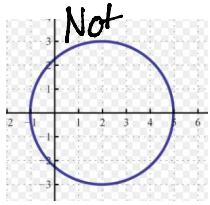
8. Find the domain and range for the following. Be sure to watch the brackets and parentheses.

a. NAH



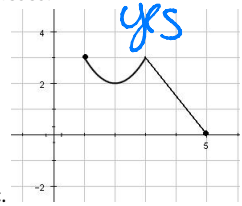
Dom: $\{1,2,4\}$ Range: $\{-5,0,2,5\}$

b. Not



Dom: $[-1,5]$ Range: $[-3,3]$

c. yes

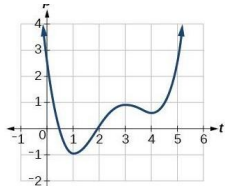


Dom: $[1,5]$ Range: $[0,3]$

d. The distance a runner run per day versus the time spent running.

Dom: Days $[0,\infty)$ Range: Distance Run $[0,\infty)$

e.



Dom: $(-\infty,\infty)$ Range: $[-1,\infty)$

9. Swine Flu is attacking Porkopolis. The function below determins how many people have swine flu where *t*=time in days and *S*=the number of people in thousands.

$S(t) = 9t - 4$

a. Find S(4).

$9(4)-4 = 32$ (32,000)

b. What does S(4) mean?

After 4 days, 32,000 people have swine flu.

c. Find t when S(t) = 23 mean.

$9t - 4 = 23$

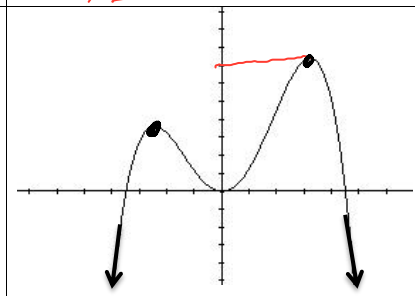
$+4 \quad +4$

$\frac{9t}{9} = \frac{27}{9}$

$t = 3$ days

d. What does S(t) = 23 mean?

When 23,000 people r infected, we have hit day 3.

Domain	Range	x-intercepts	y-intercepts
$(-\infty,\infty)$	$(-\infty,7]$	$(-3.5,0)$ $(4.5,0)$	$(0,0)$
Increasing: $(-\infty,-2.5)$ $(0,4.5)$		**Decreasing:** $(-2.5,0)$ $(4.5,\infty)$	**Function?** yes
		Constant: none	**End Behavior** $x \to -\infty$ $y \to \infty$ $x \to \infty$ $y \to -\infty$

Maximums: Absolute	Relative	Minimums: Absolute	Relative
none	$(0,0)$	$(3,7)$	$(-2.5,4)$