Answer each question as best you can. Show all your work for full credit.

1. Solve the following linear equations and verify your answers. **GOOGLE: SOLVING LINEAR EQUATIONS**

   a) $\dfrac{x}{5} + 3 = -1$ b) $-28 + 6x - 4 = -23 + 3x$

   c) Enrique solved the problem below and made an error. Circle the error and explain what he should have done.
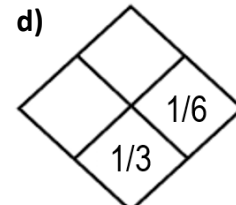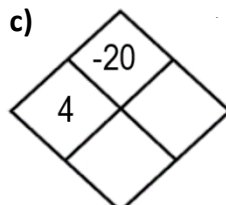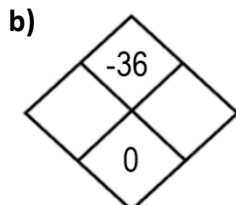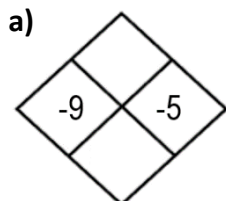
   $$-8 + 5x - 2 = 11x - 4 - 4x$$
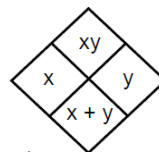 $$-10 + 5x = 8x - 4$$
   $$-10 = 13x - 4$$
   $$-6 = 13x$$
   $$-\dfrac{6}{13} = x$$

2. Solve the following diamond problems. **GOOGLE: DIAMOND PROBLEMS**

   Diagram: diamond with xy (top), x (left), y (right), $x + y$ (bottom)

   a)
   diamond: -9 (left), -5 (right)

   b)
   diamond: -36 (top), 0 (bottom)

   c)
   diamond: -20 (top), 4 (left)
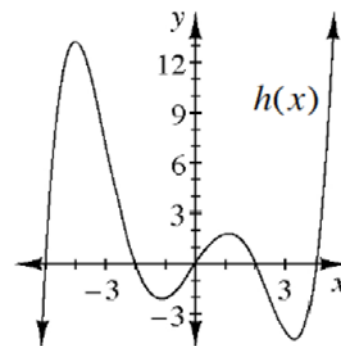
   d)
   diamond: 1/6 (right), 1/3 (bottom)

3. Evaluate the following: **GOOGLE: FUNCTION NOTATION INPUTS AND OUTPUTS**

   a) Find f(-2) given $f(x) = 3x^2 - 2x$.

   b) Refer to the graph to the right.

      1) Find h(1).

      2) Find x when f(x) = 0.

   c) Refer to the table at the right.

x	3	2	1	0	1	2	3
f(x)	-3	-1	1	3	5	7	9

      1) Find f(2).

      2) Find x when f(x) = 7.

d) Find f(-4) for function f(x) and use the output as the input for function g(x). $f(x) = x^2 - 7$
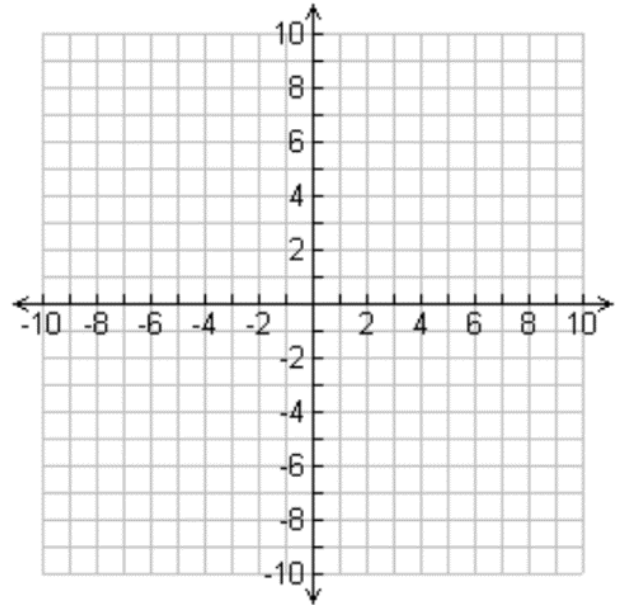$$g(x) = \sqrt{x-5}$$

  1) What is the output for function g(x)?

  2) Will function f(x) ever have outputs that will not be allowable inputs for function g? Explain your reasoning.
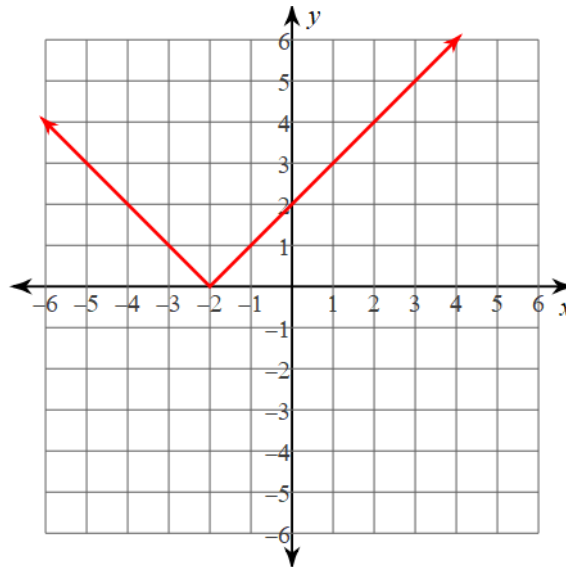
4. a) Using the axes to the right, graph f(x) = x² + 4x – 5 using inputs -6 to 2.
  <u>GOOGLE</u>: **GRAPHING FUNCTIONS USING A TABLE**

b) Describe the graph below using as many words from the word bank below appropriately.
  <u>GOOGLE</u>: **DESCRIBING FUNCTIONS**

shape	symmetry
x-intercept	y-intercept
increasing	decreasing
maximum	minimum
open up	open down
domain	range
function	vertex