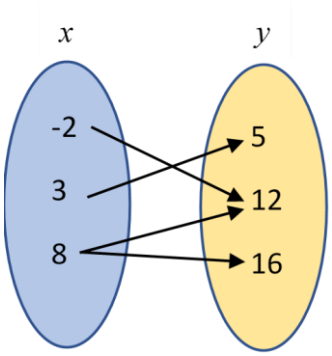
Learning Activity – Section 5.3 – Functions and Relations

Names: _____ _____

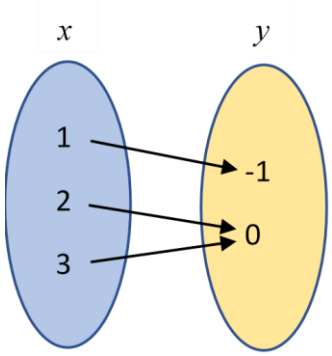
_____ _____

1. Determine if each relation in (a) through (h) defines y as a function of x. If the relation is not a function, explain why not.

a.



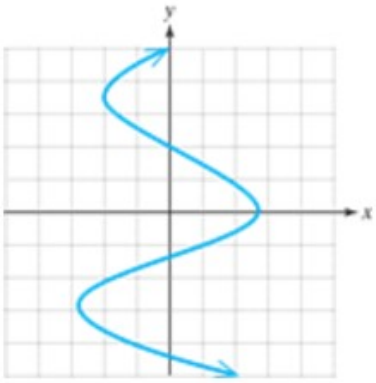
b.



c. $\{(1,3),(2,3),(3,5),(5,3)\}$

d. $\{(2,3),(3,4),(2,5),(4,3)\}$

e.



f.

g. $2x^2 - 3y = 7$

h. $3x^2 + 3y^2 = 12$

2. Evaluate $g(x)=\sqrt{6-2x}$ for the given values of x.

a. $g(3)$ b. $g(4)$ c. $g(-4)$

3. Determine the x- and y-intercepts for the given functions.

a. $f(x)=\left|-\frac{1}{5}x+1\right|-4$

b. $g(x)=-2x^2-4x+10$

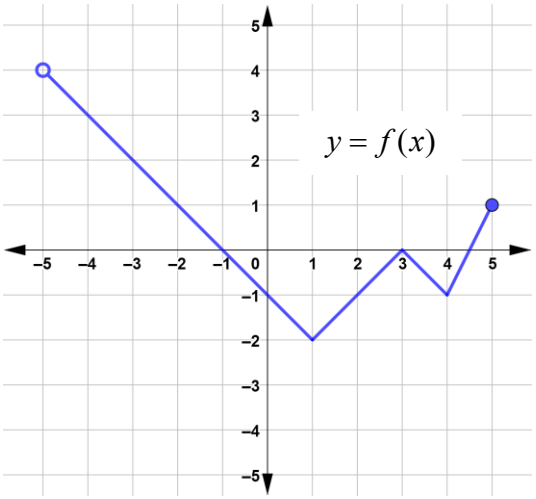
4. Write the domain of each of the functions in interval notation

a. $f(x)=\frac{2x}{x^2-9x-36}$ b. $g(x)=\sqrt{1-3x}$

c. $h(x)=\frac{x^2+5}{\sqrt{x-10}}$ d. $m(x)=7x^2-20$

e. $n(x)=\frac{\sqrt[4]{8-x}}{x-6}$ f. $p(x)=\frac{14}{\sqrt[3]{2-x}}$

5. Refer to the graph of the function $f(x)$.



a. Find $f(5)$.

b. Find $f(-5)$.

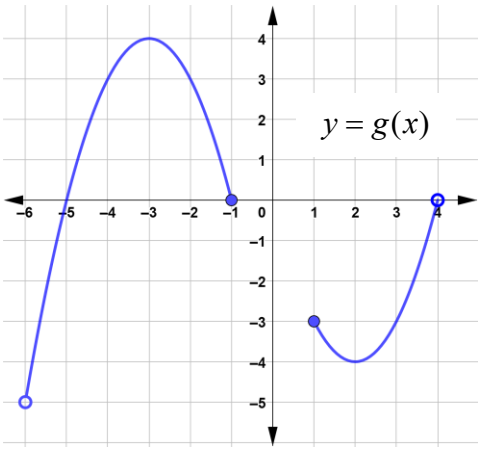
c. For what value(s) of x is $f(x) = -1$?

d. For what value(s) of x is $f(x) = -3$?

e. Write the domain of f in interval notation.

f. Write the range of f in interval notation.

6. Refer to the graph of the function $g(x)$.



a. Find $g(2)$.

b. Find $g(-3)$.

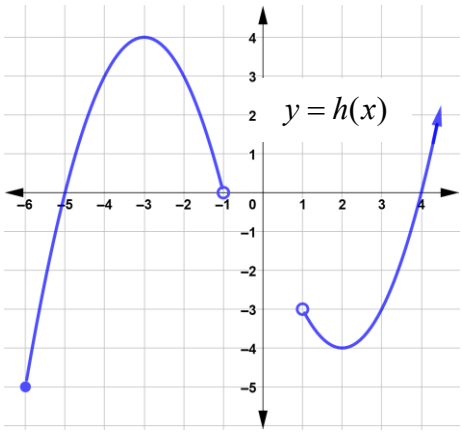
c. For what value(s) of x is $g(x) = 0$?

d. For what value(s) of x is $g(x) = 3$?

e. Write the domain of g in interval notation.

f. Write the range of g in interval notation.

7. Refer to the graph of the function $h(x)$.



a. Write the domain of h in interval notation.

b. Write the range of h in interval notation.