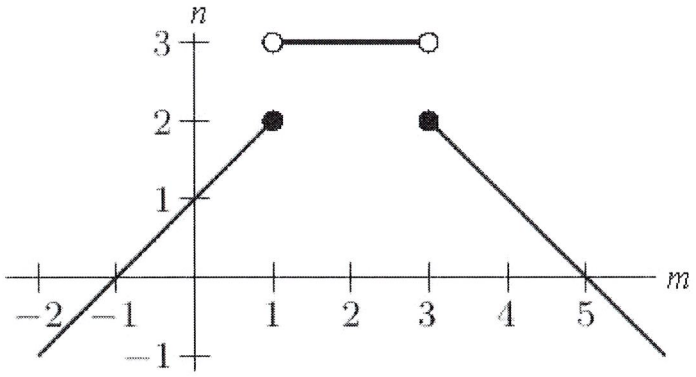
Name: _____ Date: _____

1. Evaluate $f(x) = x^2 + 4x + 6$ for $x = -2$.

2. Solve $f(x) = \sqrt{x+6} = 1$ for x.

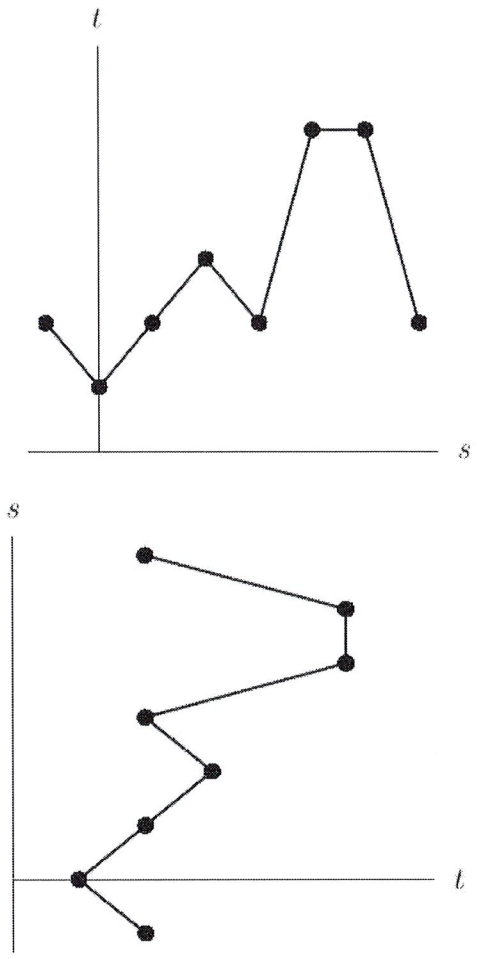
3. If $f(x) = \dfrac{1}{x+9} + 2$, solve $f(x) = 0$ for x.

4. In the following graph, is m a function of n?



5. The data points for the following table are graphed in the figure below.

s	-1	0	1	2	3	4	5	6
t	2	1	2	3	2	5	5	2



For the graph that is a function, approximate $f(0.5)$.

6. Given the following table of values, can you conclude that $f(x) = g(x)$?

x	0	1	2	3	4	5
$f(x)$	9	10	12	15	19	24
$g(x)$	9	10	12	15	19	24

7. Find the domain and range of the function $f(x) = \dfrac{-4}{\sqrt{x-5}}$

8. Find the domain of the function $h(x) = \dfrac{7}{x^2 - 9}$.

9. Find the domain and range of the function $h(x) = \dfrac{-11}{x+4}$ $h(x) = \dfrac{-11}{x+4}$

10. Find the domain of the function $g(x) = \sqrt{\quad}$. $g(x) = \dfrac{2x-1}{x-7}$

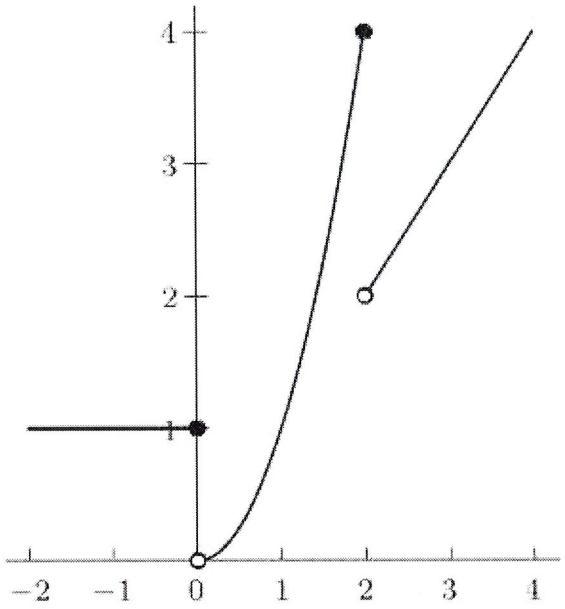
11. Let $f(x) = \dfrac{3}{(x-2)^2}$.

    a) Graph $f(x)$.

    b) Use the graph to find the range of the function on the domain $[-2, 4]$. Answer key needs to be fixed

12. Evaluate $h(-4)$ if $h(x) = \begin{cases} 2x+8, & x \le -5 \\ -x^2+4, & x > -5 \end{cases}$

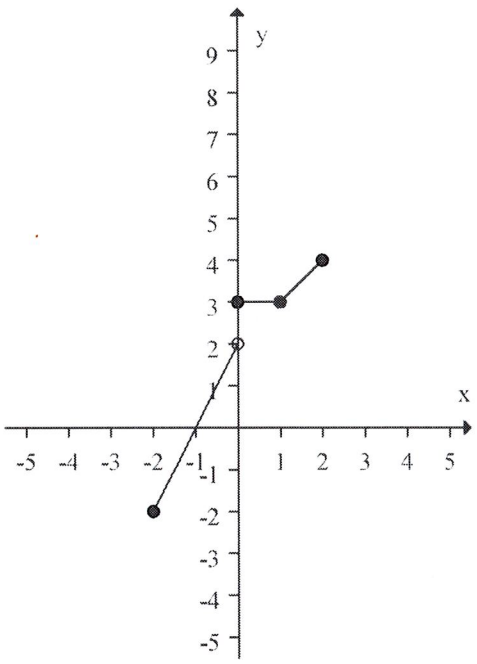
13. Does the following figure show an accurate graph of $f(x)=\begin{cases}1, & -2\le x<0\\ x^2, & 0\le x<2\\ x, & 2\le x\le 4\end{cases}$?



14. Graph the function:

$$f(x)=\begin{cases}-2, & -2\le x<1\\ x+1, & 1\le x\le 3\\ x-4, & 3<x<4\end{cases}$$

15. Write a formula for the following function:



16. Let $f(x)=\begin{cases}4-2x, & -3\le x\le -1\\ x+6, & -1<x\le 3\\ 12, & 3<x\le 5\end{cases}$. Evaluate:

a) $f(-1)$

b) $f(2)$

c) $f(5)$

17. Let $f(x)=\begin{cases}-4, & -10\le x\le -1\\ x-3, & -1<x<3\\ 2x+3, & 3\le x\le 7\end{cases}$.

a) What is the domain of f?

b) What is the range of f?

18. Let $f(x)=\begin{cases}2x-4, & x\le 0\\ 3x+8, & x>0\end{cases}$

Graph the function.

19. Let $f(x)=\begin{cases}22-x, & -5<x\le 1\\ x, & x>1\end{cases}$

a) Evaluate $f(-5)$

b) Evaluate $f(-3)$

c) Evaluate $f(1)$

d) Evaluate $f(10)$

20. Let $f(x)=\dfrac{5}{x+1}$. As $x\to -1$ from the left, $f(x)\to$ _____. Enter "infinity" for ∞ and "-infinity" for $-\infty$.

21. Does the figure below show an accurate graph of $f(x)=\dfrac{27}{x-3}$?