Name: _____ **Show work needed to justify your answer.** Date: _____

HW: # 4: Math IBSL - Standard 4 - Domain and Range of Functions 5 points

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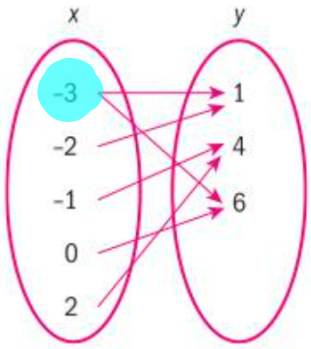
1 For each relation below, state whether it is a function or not. [redacted], state the domain and range.

a

x	6	8	8	12
y	1	6	4	−1

NOT a function.
8 Repeats in a domain.
D: {6, 8, 12} R: {1, 6, 4, −1}

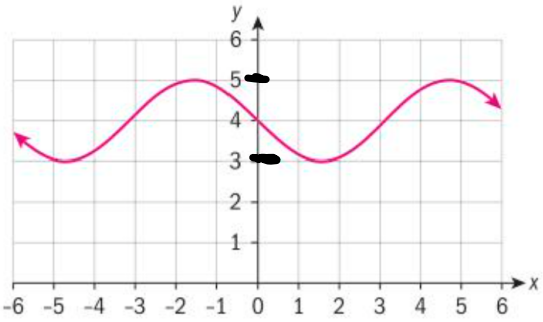
d



NOT a function.
−3 in Domain Repeats.
D: {−3, −2, −1, 0, 2} R: {1, 4, 6}

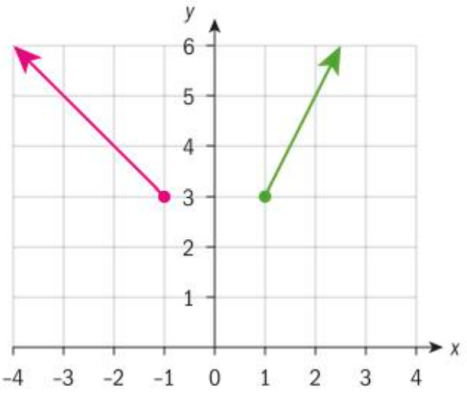
f $g(x) = -4$ Function. D: All Real #'s
R: {4}

h



Function.
D: All Real #'s
R: [3, 5] or $\{y \mid 3 \le y \le 5\}$

k



Function:
D: $(-\infty, -1] \cup [1, \infty)$
R: $[3, \infty)$

Name: _____ **Show work needed to justify your answer.** Date: _____

HW: # 4: Math IBSL - Standard 4 - Domain and Range of Functions 5 points

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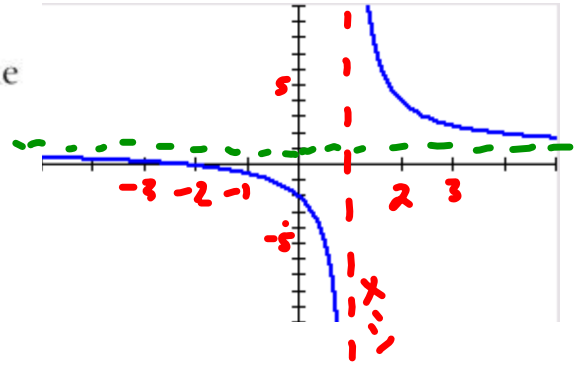
2 Use your GDC to graph the following functions. Sketch the graph and state the domain and range.

$$g(x)=\frac{x+2}{x-1}$$

H.A. $y=1$

V.A. $x=1$



D: $(-\infty,1)\cup(1,\infty)$

R: $(-\infty,1)\cup(1,\infty)$

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4 Consider the piecewise function

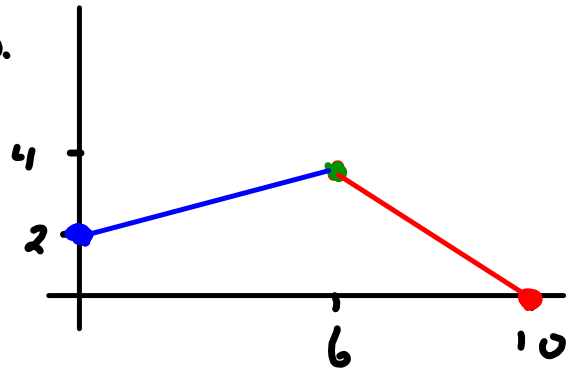
$$f(x)=\begin{cases}\frac{1}{3}x+2, & 0\le x\le 6\\ -x+10, & 6<x\le 10\end{cases}$$

a Find each value: **i** $f(6)$ **ii** $f(8)$

b Sketch the graph of f.

c Write down the domain and range of f.

b.



a(i) $f(6)=\frac{1}{3}(6)+2=2+2=4$

(ii) $f(8)=-8+10=2$

c. D: $[0,10]$ R: $[0,4]$

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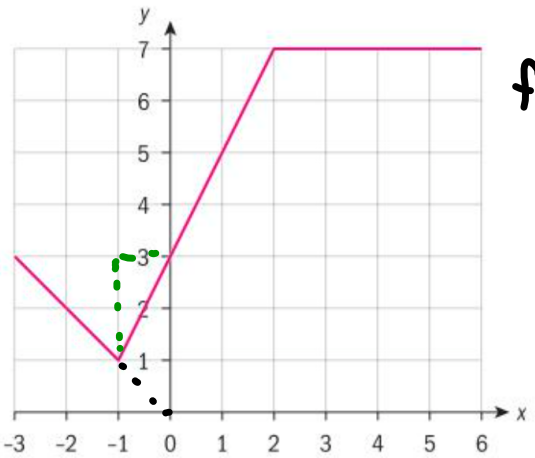
5 Consider the graph of the piecewise function $y=f(x)$, where $-3\le x\le 6$. Find the equations for the function, including an interval of the domain that applies to each part.



$$f(x)=\begin{cases}-x, & -3\le x\le -1\\ 2x+3, & -1<x\le 2\\ 7, & 2<x\le 6\end{cases}$$