Transitions to College Mathematics
Review 3.1

Name Key

SHOW ALL WORK!

For problems # 1 – 2, indicate whether the set defines a function. If it does, state the domain and range of the function.

1. {(1, 2), (2, 2), (3, 1), (4, 1), (5, 5)}

Function

Domain: {1, 2, 3, 4, 5}

Range: {1, 2, 5}

2. {(2, 1), (1, -2), (1, 2), (3,4), (5,6)}

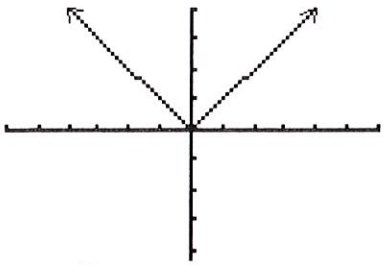
Not a Function

Domain:

Range:

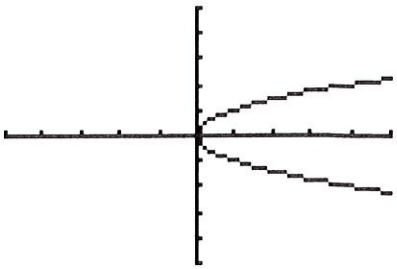
For problems # 3 – 6, indicate whether the graph is the graph of a function. Circle the correct answer.

3.



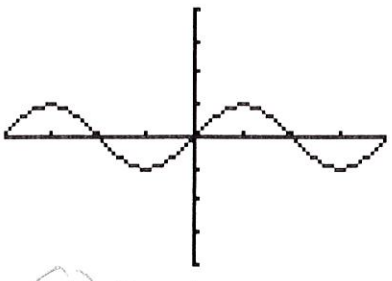
A) Function
B) Not a function

4.



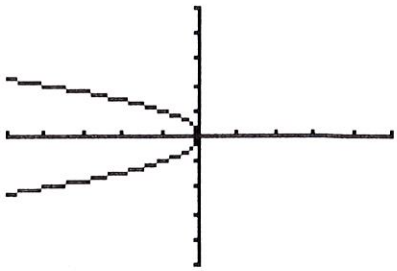
A) Function
B) Not a function

5.



A) Function
B) Not a function

6.



A) Function
B) Not a function

For problems #7–8, indicate whether the equation defines a function with independent variable x.

7. $y=x$

Function

8. $y^2=x \rightarrow$ $y = \pm\sqrt{x}$

Not a Function

For problems # 7 – 8, find the domain of the function. Express your answer in interval notation.

9. $f(x)=\sqrt{3x-7}$

$3x-7 \geq 0$

$3x \geq 7$

$x \geq 7/3$

$[7/3, \infty)$

10. $f(x)=\dfrac{22x}{x^2-9}$

$x^2-9 \neq 0$

$x^2 \neq 9$

$x \neq \pm 3$

$(-\infty,-3) \cup (-3,3) \cup (3,\infty)$

11. Given: $f(x)=4x-7$, find and simplify $\dfrac{f(x+h)-f(x)}{h}$

$\dfrac{4(x+h)-7-(4x-7)}{h}$

$\dfrac{4x+4h-7-4x+7}{h}$

$\dfrac{4h}{h} \rightarrow 4$

12. Given: $f(x)=2x+1$, find and simplify $\dfrac{f(x+h)-f(x)}{h}$

$\dfrac{2(x+h)+1-(2x+1)}{h}$

$\dfrac{2x+2h+1-2x-1}{h}$

$\dfrac{2h}{h}$

2