Algebra II
#4

Name Key
Date_____ Per _____

Give the Domain and Range for each relation in set and interval notation.

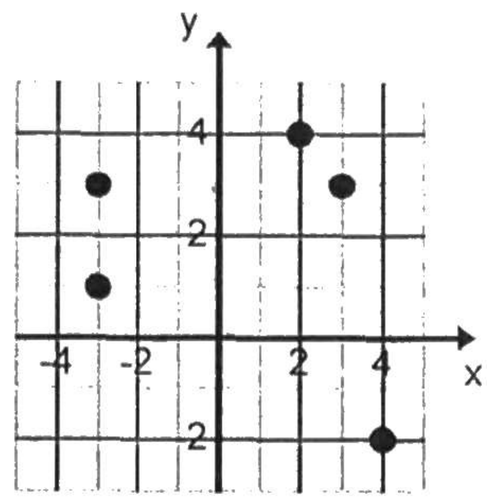
1.

Basket Ball Points Scored				
Player	Irene	Anna	Lea	Kate
Points	22	12	16	12

Domain: {Irene, Anna, Lea, Kate}

Range: {12, 16, 22}

2.

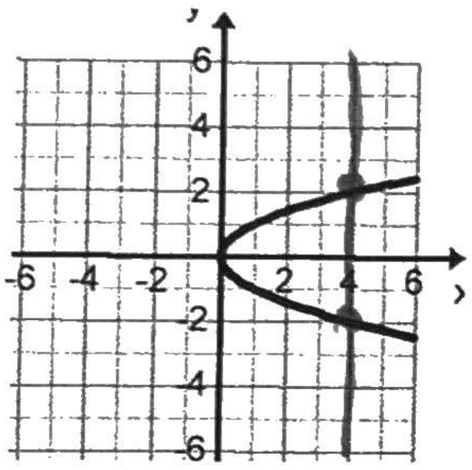


Domain:
{-3, 2, 3, 4}

Range:
{-2, 1, 3, 4}

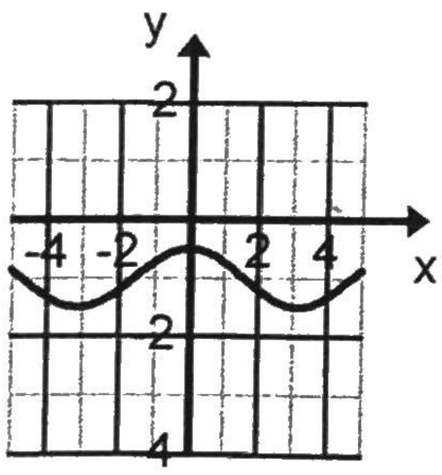
3-4 Use the vertical line test to determine whether each relation is a function. If not a function, identify **two points** a vertical line could pass through.

3.



Relation
(4,2) & (4,-2)
x's repeat

4.



Function

5. Money: In 1999 the US Mint began releasing quarters to commemorate each of the 50 states. The release schedule specified that each year for a total of 10 years, new quarters commemorating 5 different states would be released. **Explain whether each relation is a function.**
(Hint: Make a list of the data.)

A) from each year to the number of states with new quarters released in that year.

year → # of states that year
1, 2, 3, 4 → 5

Function
each x only one y

B) from each state to the year its quarter is released

STATE 1, STATE 2, STATE 3, STATE 4, STATE 5 → year #

Function
Each state only goes to one year

C) from each year to the states with new quarters released in that year

year → state #
1, 2, 3, 4, 5

NOT Function
one x matched with more than one y

D) from each year to the total number of states with quarters released by the end of the year

year # → # of states
1 → 5
2 → 10
3 → 5

Function
one x to one y

E) from the number of new quarters released each year to the year

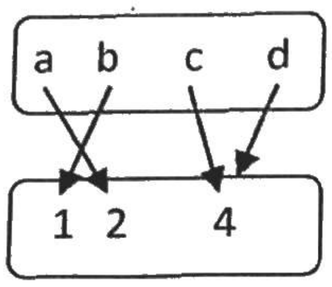
new per year → year
5 → 1, 2, 3

NOT A Function
x goes to more than one y

Key

Give the **Domain** and **Range** of each relation. Then explain whether the relation is a **function**.

6.



D: a, b, c, d

R: 1, 2, 4

Function: yes, each x goes to only one y

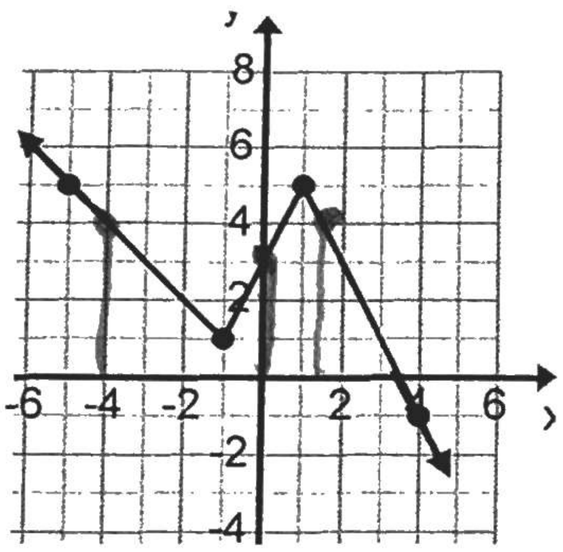
7. {(7, 1), (7, 2), (7, 3), (7, 4), (7, 6)}

D: 7 R: {1, 2, 3, 4, 6}

Function: No x's repeat or one x goes to more than one y

8,9, & 10 For each function evaluate $f(0)$, $f(1.5)$, and $f(-4)$.

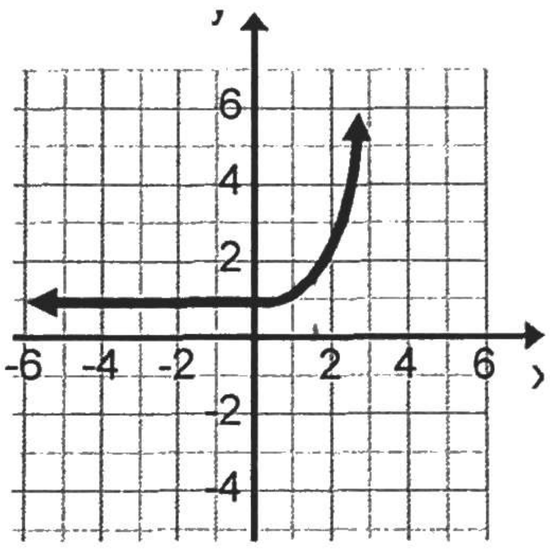
8.



$f(0)=$ 3 $f(1.5)=$ 4

$f(-4)=$ 4

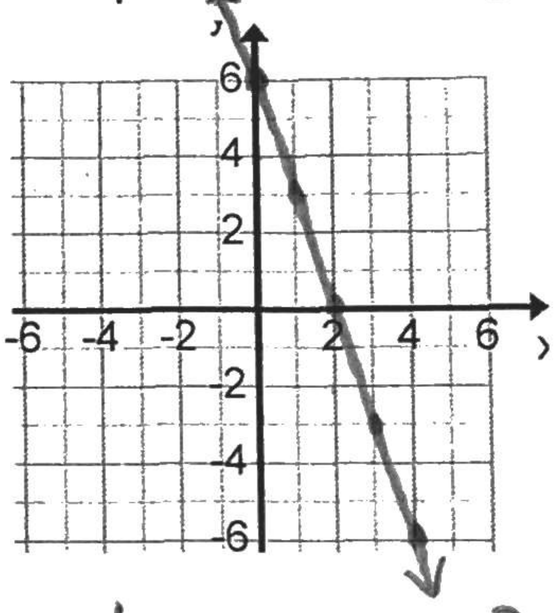
9.



$f(0)=$ 1 $f(1.5)=$ 1.5

$f(-4)=$ 1

10. Graph the function: $g(x) = -3x + 6$



$f(0)=$ 6 $f(1.5)=$ 3

$f(-4)=$ 18

$f(-4) = -3(-4)+6 = 18$

11. For the function, $f(x) = 7x - 4$, evaluate $f(0)$, $f(\frac{3}{2})$, and $f(-1)$

$f(0) = 7(0) - 4$

$f(0) = -4$

$f(3/2) = 7(\frac{3}{2}) - 4$

$f(3/2) = 6.5$

$f(-1) = 7(-1) - 4$

$f(-1) = -11$

12. Evaluate the function, $f(x) = x(1-2x)$ for the replacement set $\{-8, \frac{2}{3}, 1, 9, 4\}$. replace x with ( ) & use calc.

$f(-8) = (-8)(1 - 2(-8))$

$f(-8) = -136$

$f(\frac{2}{3}) = (\frac{2}{3})(1 - 2(\frac{2}{3}))$

$f(\frac{2}{3}) = -\frac{2}{9}$

$f(1) = (1)(1 - 2(1))$

$f(1) = -1$

$f(9) = (9)(1 - 2(9))$

$f(9) = -153$

$f(4) = (4)(1 - 2(4))$

$f(4) = -28$