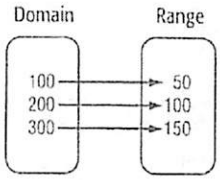
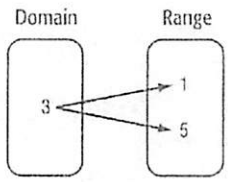
NAME _____ DATE _____ PERIOD _____

# 2.1/2.2 Homework
## *Relations and Functions*

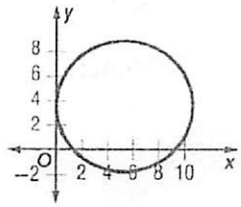
**State the domain and range of each relation. Then determine whether each relation is a *function*.**

1. 


2. 

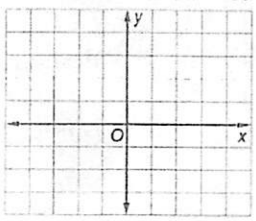

3.

| $x$ | $y$ |
|---|---|
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |

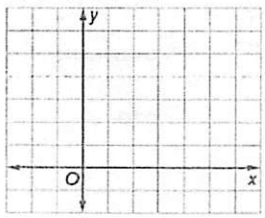
4. 


**Graph each relation or equation and determine the domain and range. Then determine if the relation is a function.**

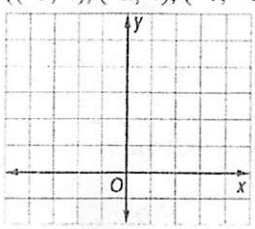
5. $\{(2, -3), (2, 4), (2, -1)\}$



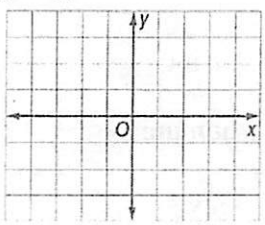

6. $\{(2, 6), (6, 2)\}$




7. $\{(-3, 4), (-2, 4), (-1, -1), (3, -1)\}$




8. $x = -2$

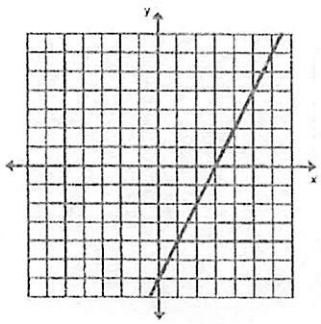


Secondary Math 3
Section 2.2

Name: _____
Period: _____

For each of the following graphs or tables:
Identify the domain, range; be sure to put your answers in interval notation.
Then identify x- and y-intercepts of the function.

1.



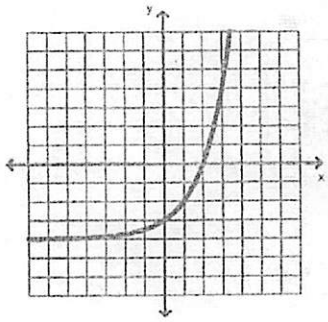
*x*- int: _____

*y*-int: _____

*domain:* _____

*range:* _____

2.



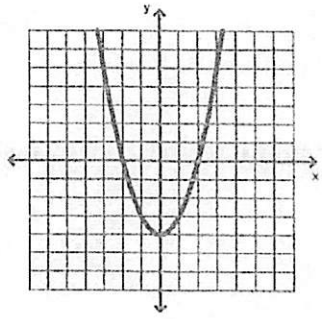
*x*-int: _____

*y*-int: _____

*domain:* _____

*range:* _____

3.



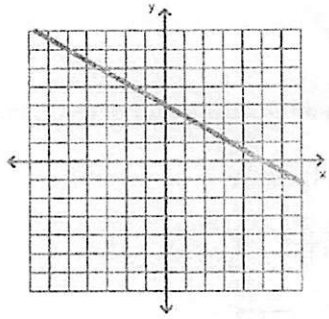
*x*- int: _____

*y*-int: _____

*domain:* _____

*range:* _____

4.



*x*-int: _____

*y*-int: _____

domain: _____

range: _____

5.

| *x* | *y* |
|---|---|
| −2 | 5 |
| −1 | 0 |
| 0 | −5 |
| 1 | −10 |
| 2 | −15 |

*x*-int: _____

*y*-int: _____

domain: _____

range: _____

6.

| *x* | *y* |
|---|---|
| −3 | −10 |
| −1 | −6 |
| 0 | −4 |
| 2 | 0 |
| 4 | 4 |

*x*-int: _____

*y*-int: _____

*domain:* _____

*range:* _____

7.

| *x* | *y* |
|---|---|
| −3 | 0 |
| −1 | −6 |
| 0 | −7 |
| 1 | −7.5 |
| 2 | −7.75 |

*x*-int: _____

*y*-int: _____

*domain:* _____

*range:* _____

8.

| *x* | *y* |
|---|---|
| −5 | 0 |
| −3 | 12 |
| 0 | 15 |
| 2 | 7 |
| 3 | 0 |

*x*-int: _____

*y*-int: _____

*domain:* _____

*range:* _____

NAME _____ DATE _____ PERIOD _____

**Algebraically determine the following domains.**

1. $d(y) = y + 3$

2. $g(k) = 2k^2 + 4k - 6$

3. $b(n) = \sqrt{2n - 8}$

4. $m(t) = \sqrt{9 - 3t}$

5. $u(x) = \dfrac{x - 5}{2x + 4}$

6. $a(r) = r + \dfrac{1}{r - 1}$

7. $y(c) = \dfrac{2}{c^2 + 3c}$

8. $q(w) = \dfrac{w + 4}{w^2 + 1}$

9. $f(x) = \dfrac{x}{\sqrt{x + 3}}$

10. $n(t) = \sqrt{\dfrac{t}{1 + t}}$

11. $x(y) = y^4 + 2y + \sqrt{y} + \dfrac{1}{y}$

**Find each value if $f(x) = 2x - 1$ and $g(x) = 2 - x^2$.**

12. $f(0)$

13. $f(12)$

14. $g(4)$

15. $f(-2)$

16. $g(-1)$

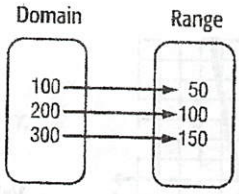
17. $f(d)$

NAME Key DATE _____ PERIOD _____

# 2.1/2.2 Homework
## *Relations and Functions*

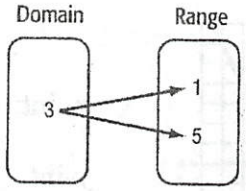
**State the domain and range of each relation. Then determine whether each relation is a *function*.**

1. 




D: (100, 200, 300)
R: (50, 100, 150)
yes

2. 



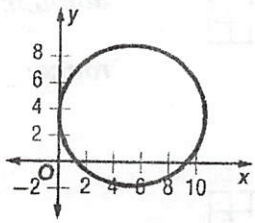

D: (3)
R: (1, 5)
yes

3. 

| x | y |
|---|---|
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |

D: (1, 2, 3)
R (2, 4, 6)
yes

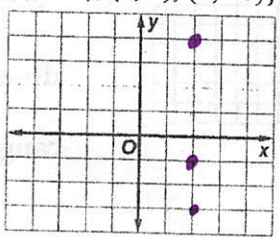
4. 




D: [0, 10]
R: [−2, 8]
no

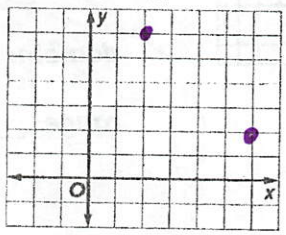
**Graph each relation or equation and determine the domain and range. Then determine if the relation is a function.**

5. {(2, −3), (2, 4), (2, −1)}



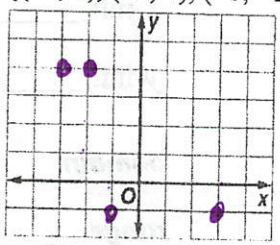

D: (2)
R (−3, −1, 4)
no

6. {(2, 6), (6, 2)}



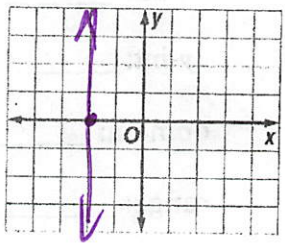

D: (2, 6)
R: (2, 6)
yes

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




D: (−3, −2, −1, 3)
R: (−1, 4)
yes

8. $x = -2$



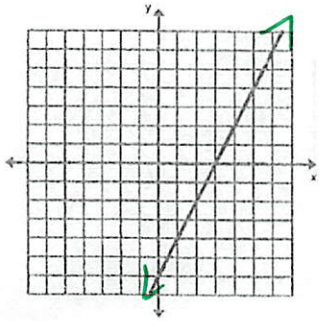

D: (−2)
R: (−∞, ∞)
no

Secondary Math 3
Section 2.2

Name: Key
Period: _____

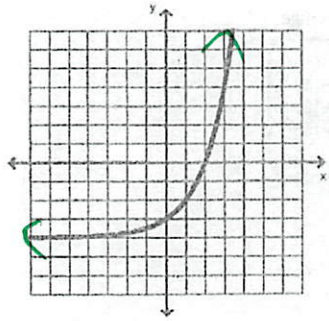
For each of the following graphs or tables:
Identify the domain, range; be sure to put your answers in interval notation.
Then identify x- and y-intercepts of the function.

1.



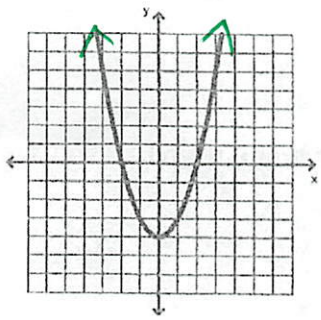
x- int: (3,0)
y-int: (0,-6)
domain: (-∞,∞)
range: (-∞,∞)

2.



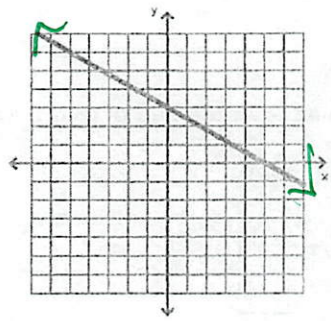
x-int: (2,0)
y-int: (0,-3)
domain: (-∞,∞)
range: (-4,∞)

3.



x- int: (-2,0) (2,0)
y-int: (0,-4)
domain: (-∞,∞)
range: (-4,∞)

4.



x-int: (5,0)
y-int: (0,-3)
domain: (-∞,∞)
range: (-∞,∞)

5.

| x | y |
|---|---|
| -2 | 5 |
| -1 | 0 |
| 0 | -5 |
| 1 | -10 |
| 2 | -15 |

x-int: (-1,0)
y-int: (0,-5)
domain: (-2,-1,0,1,2)
range: (-15,-10,-5,0,5)

6.

| x | y |
|---|---|
| -3 | -10 |
| -1 | -6 |
| 0 | -4 |
| 2 | 0 |
| 4 | 4 |

x-int: (2,0)
y-int: (0,-4)
domain: (-3,-1,0,2,4)
range: (-10,-6,-4,0,4)

7.

| x | y |
|---|---|
| -3 | 0 |
| -1 | -6 |
| 0 | -7 |
| 1 | -7.5 |
| 2 | -7.75 |

x-int: (-3,0)
y-int: (0,-7)
domain: (-3,-1,0,1,2)
range: (-7.75,-7.5,-7,-6,0)

8.

| x | y |
|---|---|
| -5 | 0 |
| -3 | 12 |
| 0 | 15 |
| 2 | 7 |
| 3 | 0 |

x-int: (-5,0) (3,0)
y-int: (0,15)
domain: (-5,-3,0,2,3)
range: (0,7,12,15)

NAME Key DATE _____ PERIOD _____

**Algebraically determine the following domains.**

1. $d(y) = y + 3$ $(-\infty, \infty)$

2. $g(k) = 2k^2 + 4k - 6$ $2(k^2+2k-3)$ $2(k+3)(k-1)$ $(-\infty, \infty)$

3. $b(n) = \sqrt{2n-8}$ $2n-8 \geq 0$ $n \geq 4$ $[4, \infty)$

4. $m(t) = \sqrt{9-3t}$

5. $u(x) = \dfrac{x-5}{2x+4}$ $2x+4 \neq 0$ $x \neq -2$

6. $a(r) = r + \dfrac{1}{r-1}$ $r \neq 1$

7. $y(c) = \dfrac{2}{c^2+3c} = \dfrac{2}{c(c+3)}$ $c \neq 0$ $c \neq -3$

8. $q(w) = \dfrac{w+4}{w^2+1}$ $(-\infty, \infty)$

9. $f(x) = \dfrac{x}{\sqrt{x+3}}$ $x+3 > 0$ $x \geq -3$ $(-3, \infty)$

10. $n(t) = \sqrt{\dfrac{t}{1+t}}$ $(-\infty, -1) \cup [0, \infty)$

11. $x(y) = y^4 + 2y + \sqrt{y} + \dfrac{1}{y}$ $y \geq 0$ $y \neq 0$ $(0, \infty)$

**Find each value if $f(x) = 2x - 1$ and $g(x) = 2 - x^2$.**

12. $f(0)$ $f(0) = 2(0) - 1$ $f(0) = -1$

13. $f(12)$ $f(12) = 2(12) - 1$ $f(12) = 23$

14. $g(4)$ $g(4) = 2 - (4)^2$ $g(4) = -14$

15. $f(-2)$ $f(-2) = 2(-2) - 1$ $f(-2) = -5$

16. $g(-1)$ $g(-1) = 2 - (-1)^2$ $g(-1) = 1$

17. $f(d)$ $f(d) = 2(d) - 1$ $f(d) = 2d - 1$

Revised #10 $\dfrac{t}{\sqrt{1+t}}$

$1+t > 0$

$t > -1$ $(-1, \infty)$