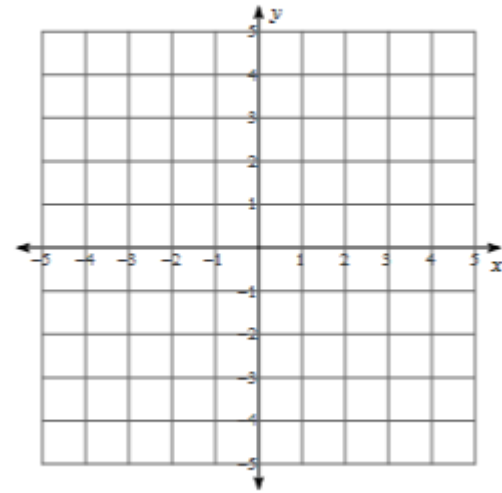## 2.2 Represent Functions and Relations
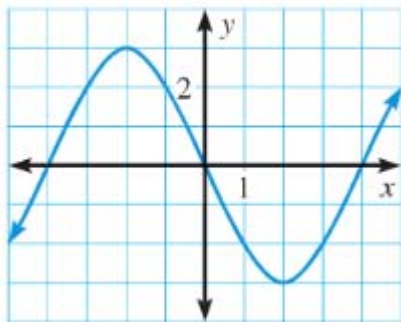
<u>Relation:</u>

<u>Domain:</u>

<u>Range:</u>

Consider the following relation: (0,2), (-2, 4), (4, -3) and (-2, -4).

Identify the domain and range:

<u>Function:</u>

Ex 1:   Ex 2:
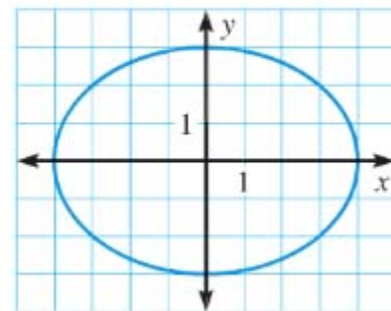
<u>Vertical Line Test:</u>

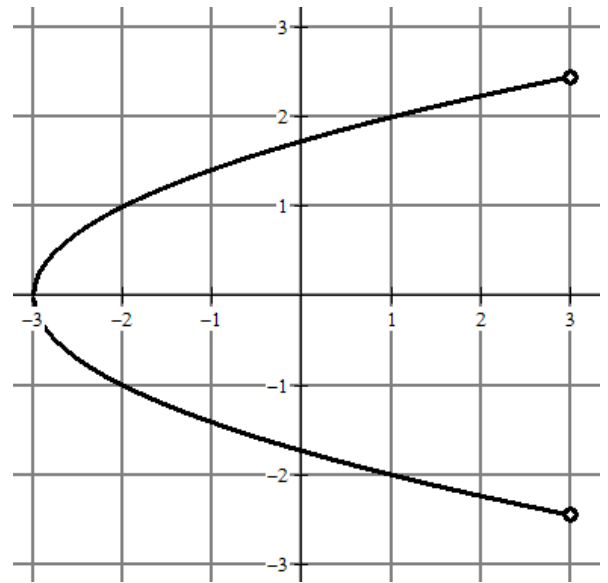D: D:

R: R:

Identify the domain and range:

Find the following:

f(-2) =   f(-3) =

x when f(x) = 1

Is the relation a function?
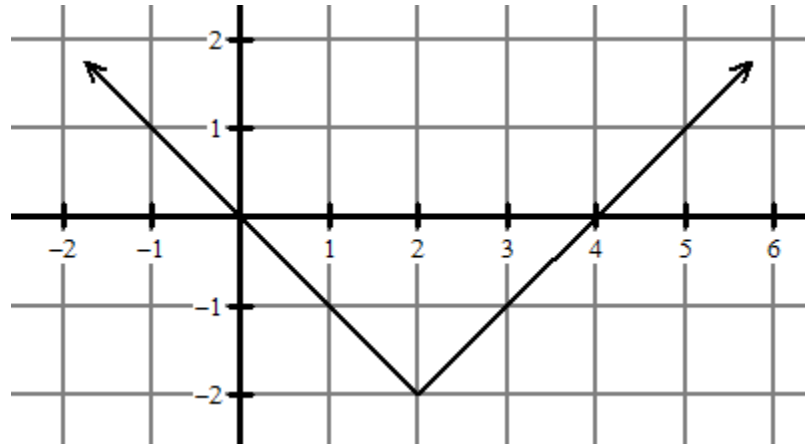
Identify the domain and range:

Find the following:

f(3) =   f(-2)=

x when f(x) = 1

Is the relation a function?
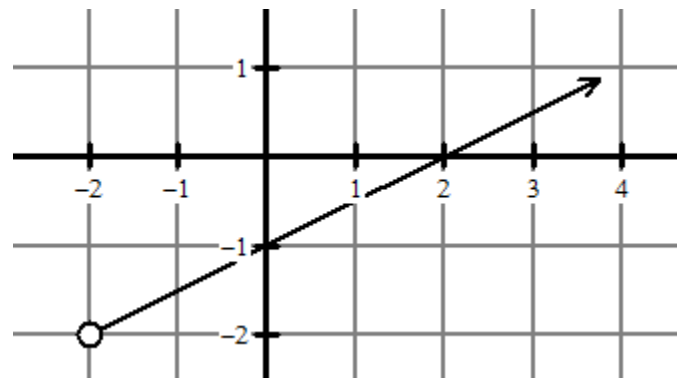
Identify the domain and range:

Find the following:

f(4) =   f(-1) =

x when f(x) = 0

Is the relation a function?

YOU TRY
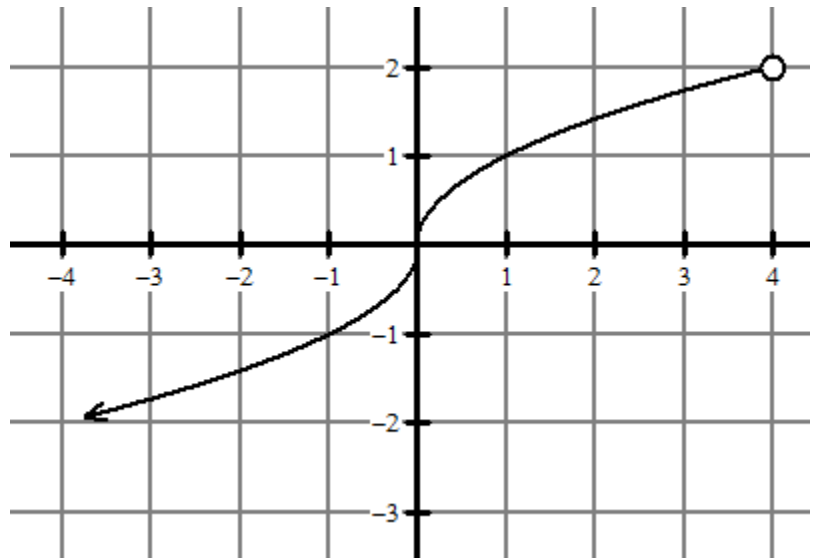Identify the domain and range:

Find the following:

f(-1) =   f(0) =

x when f(x) = -1

Is the relation a function?
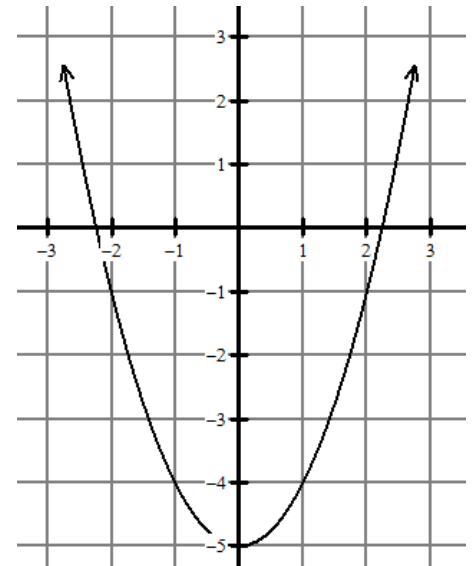
Summary:

Practice Problems 2.2

1) Domain: 2) Range:

3) Find f(1)   4) Find f(0)   5) Find x, when f(x) = -1

6) Is the relation a function? Why or why not?

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7) Domain: 8) Range:
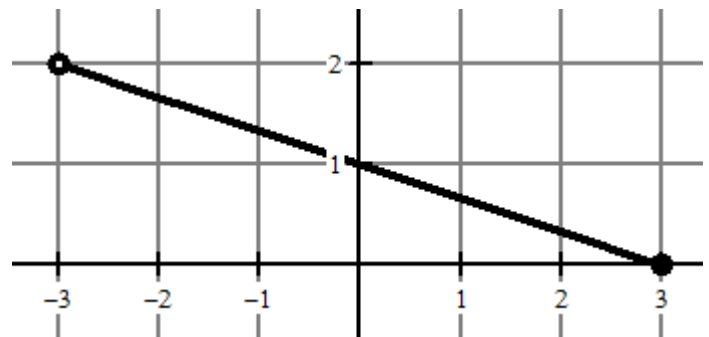
9) Find f(0)   10) Find f(-3)

11) Find x, when f(x) = 1

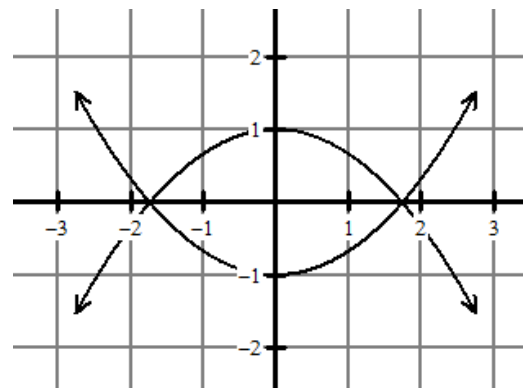12) Is the relation a function? Why or why not?

13)Domain: 14) Range:

15)Find f(-3)   16) Find f(0)

17) Find x, when f(x) = -2

18) Is the relation a function? Why or why not?

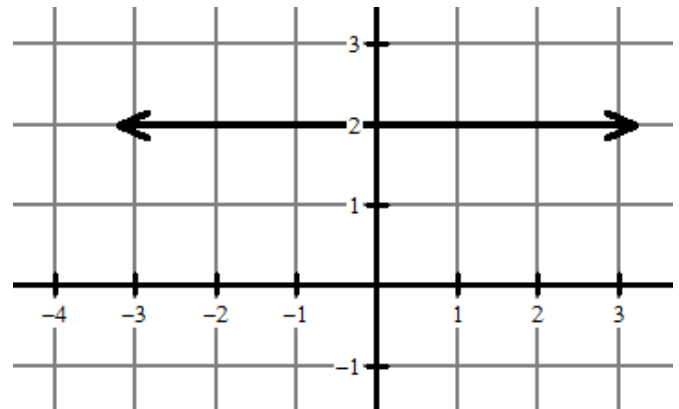---

19)Domain: 20) Range:

21Find f(-3)   22) Find f(0)

23) Find x, when f(x) = -2

24) Is the relation a function? Why or why not?

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25)Domain: 26) Range:
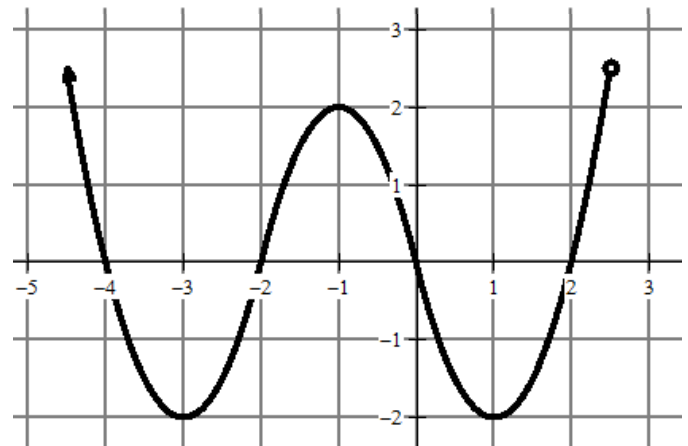
27)Find f(-3)   28) Find f(0)

29) Find x, when f(x) = -2

30) Is the relation a function? Why or why not?

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31)Domain: 32) Range:
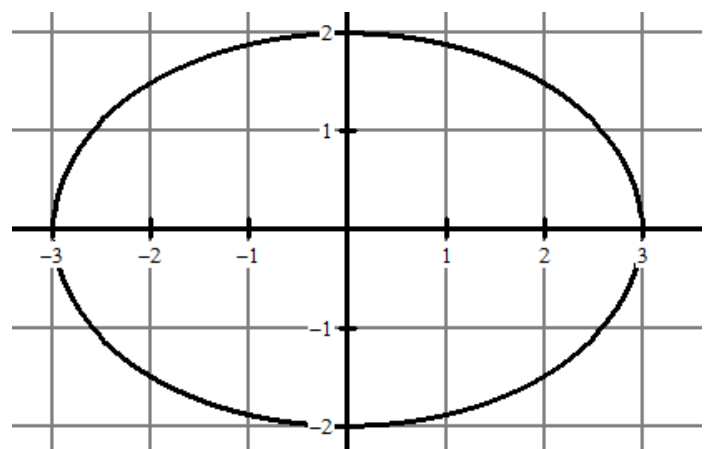
33)Find f(-2)   34) Find f(0)

35) Find x, when f(x) = -1
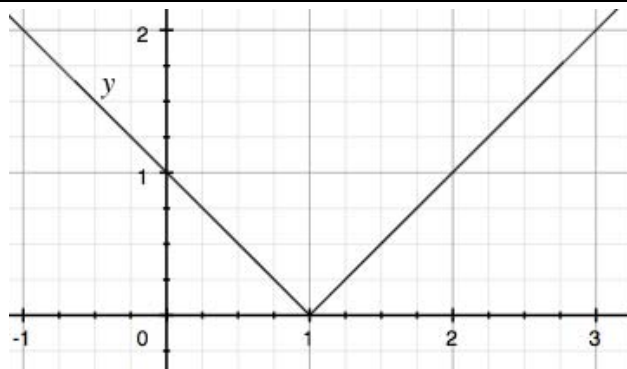
36) Is the relation a function? Why or why not?

Algebra Skillz

1) Find the y-interecept(s)

2) Find the x-intercept(s)

3) Find $f(-1) =$

4) Find x when $f(x) = 1$

5) Simplify: $5\sqrt{18}$

6) Simplify: $3\sqrt{50}$

7) Solve: $\frac{21}{x} + 10 = 13$

8) Factor: $x^2 - 13x + 42$

SAT PREP Below are sample SAT questions. The SAT is the main standardized test that colleges look at for admission. One is multiple choices; the other is free response where you must grid in your answer. Blow it up.

MULITPLE CHOICE	GRID IN
For which value of the following functions is $f(5) < f(-5)$? (A) $f(x) = 2x^2$ (B) $f(x) = 2$ (C) $f(x) = \frac{2}{x}$ (D) $f(x) = 2 - x^3$ (E) $f(x) = x^4 + 2$	If $f(x) = -2x^3 - 2$, what is the value of $f(-2)$?

2.2 Application and Extensions
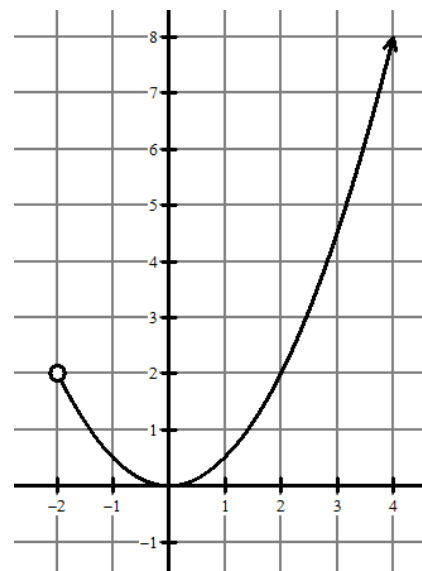
1) Domain: 2) Range:

2) Find $f(-3)$ 4) Find $f(0)$ 5) Find x, when $f(x) = -1$

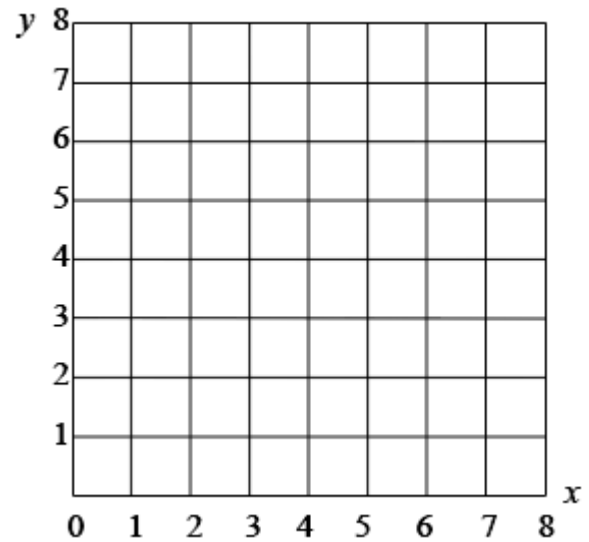6) Is the relation a function? Why or why not?

RICH TASK!
COMBINING INEQUALITIES

Some treasure has been buried at point (x, y) on the grid, where x and y are whole numbers. Here are three clues to help you find the treasure.

Clue 1: $x > 2$
Clue 2: $x + y < 8$
Clue 3: $2y - x \geq 0$

1) Which of the following points could be a possible location for the treasure?

(3, 2)   (2, 3)   (5, 3)   (3, 5)   (4, 3)   (5, 2)

2) On the grid show all possible places the treasure could be located.

3) Here are two more clues: Clue 4: $y > x - 4$ Clue 5: $y < x - 1$

Which of those two extra clues doesn't help at all?

Explain why.

At what point is the treasure located? Defend your answer.