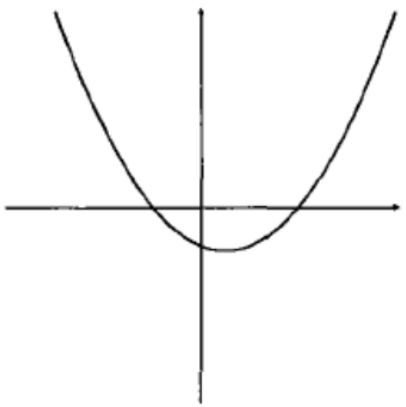
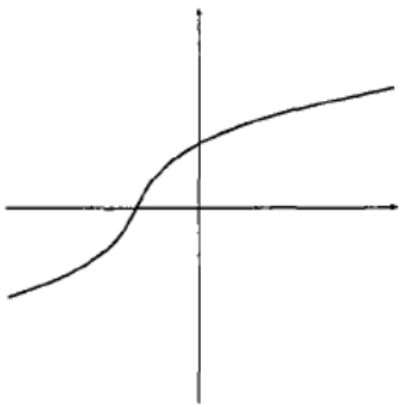
Warm-Up

Which of the following are graphs of functions?

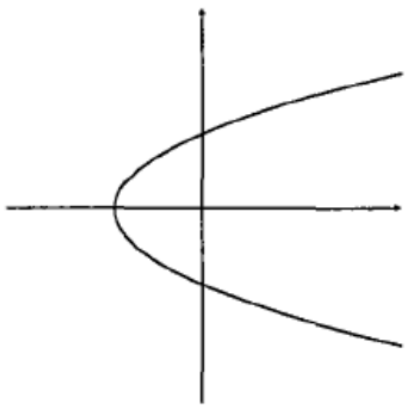
I



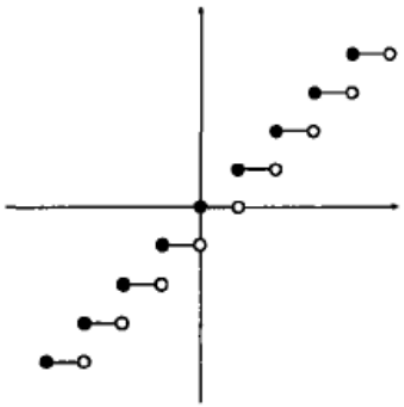
II



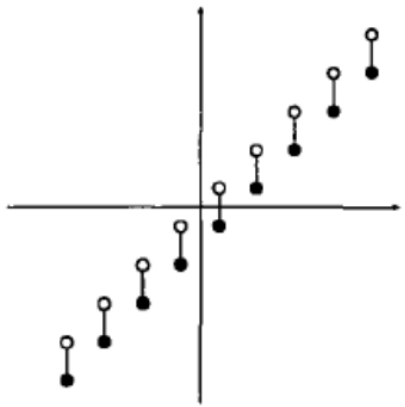
III



IV



V



A) I only
B) II only
C) III only
D) I and II only
E) I and III only
F) I, II, and IV only
G) II and V only
H) I, II, and III only

Review of Functions

Relation:

Domain:

Range:

Function:

Is the following relation a function?

{ (2,3), (-8,2), (4,6), (2.-1), (1,-5) }

Is the following relation a function?

{ (1,6), (-2,4), (0,6), (3,7) }

Four Ways to Represent a Function:

1.

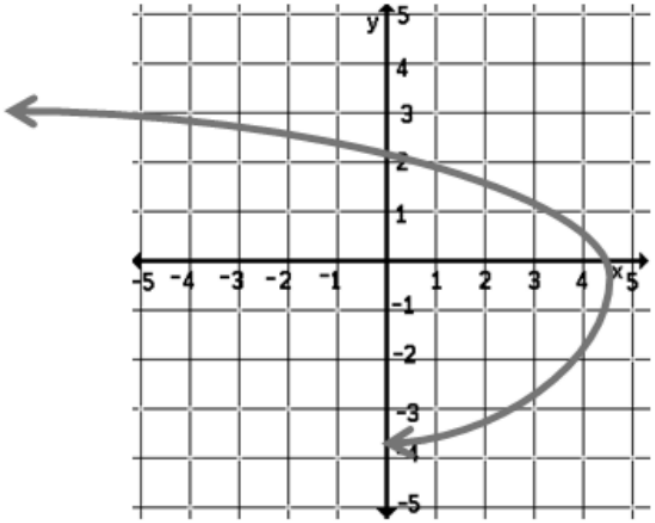
2.

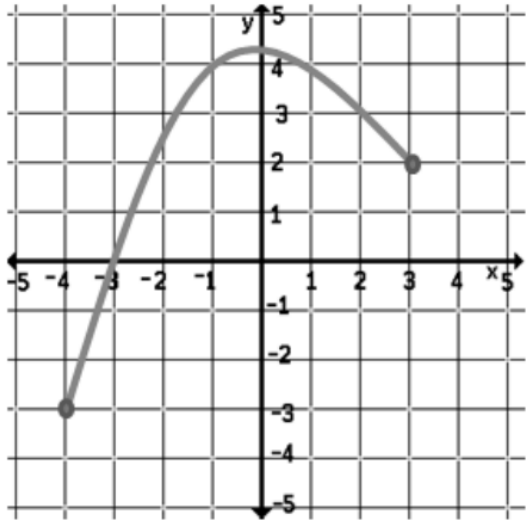
3.

4.

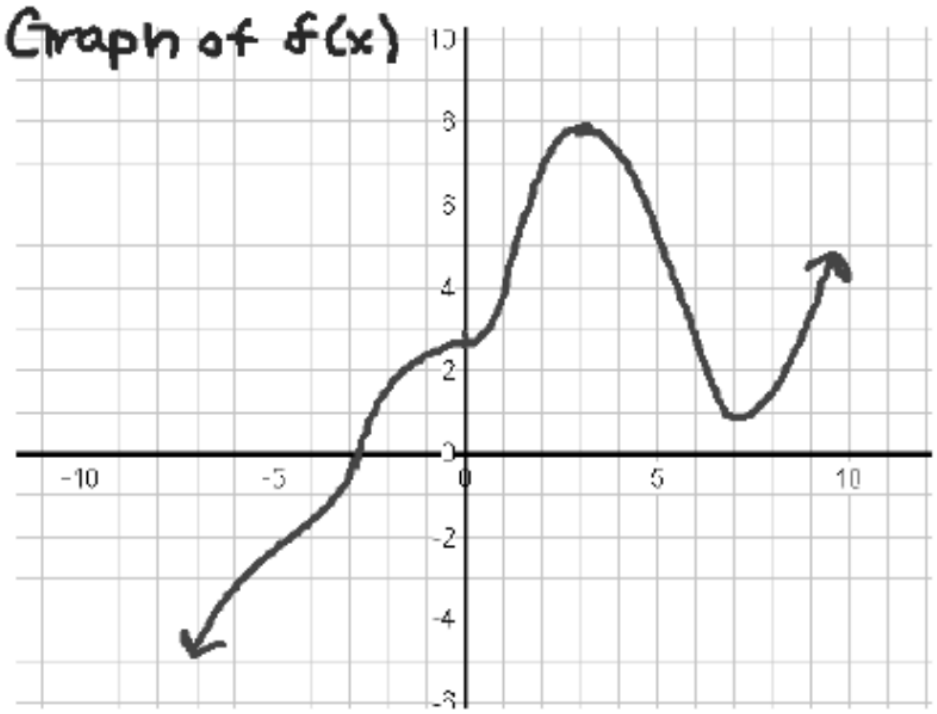
Vertical Line Test

Are the following graphs of functions?





Evaluating Functions



Find:

f(2)=

f(7)=

f(-4)=

Find the x values if:

f(x)=6

f(x)=2

f(x)=0

Where is the function
Increasing?
Decreasing?

Evaluate:

$$f(x) = x^2 + 6x - 2$$

$$f(3) =$$

$$f(-2) =$$

$$f(2t) =$$

$$f(x+1) =$$

$$f\left(\frac{a}{3}\right) =$$

Finding Domain & Range of Algebraic Functions

Domain:

Range:

case 1:

$$f(x) = x^3 - 2x + 5$$

case 2:

$$f(x) = \frac{2x}{x^2 - 4}$$

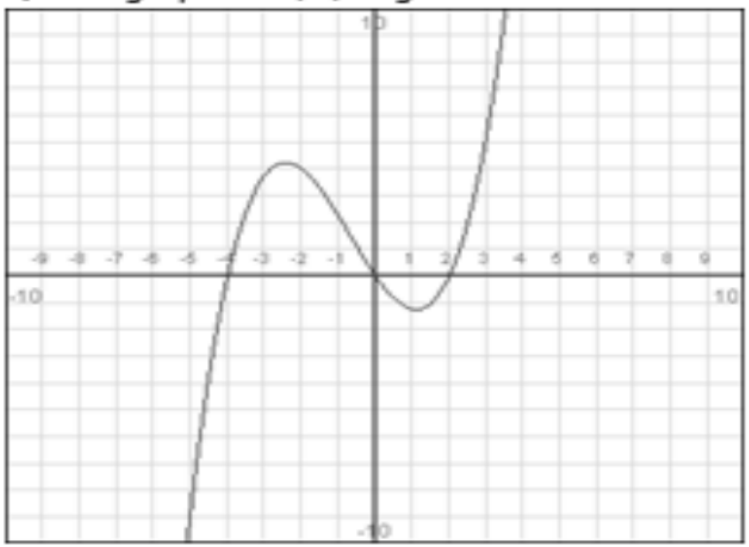
case 3:

$$f(x) = \sqrt{3x + 2}$$

case 4:

$$f(x) = \frac{4}{\sqrt{x^2 - 9}}$$

1) The graph of $f(x)$ is given below.



State or estimate the value of:

$f(3) =$ $f(-2) =$ $f(0) =$

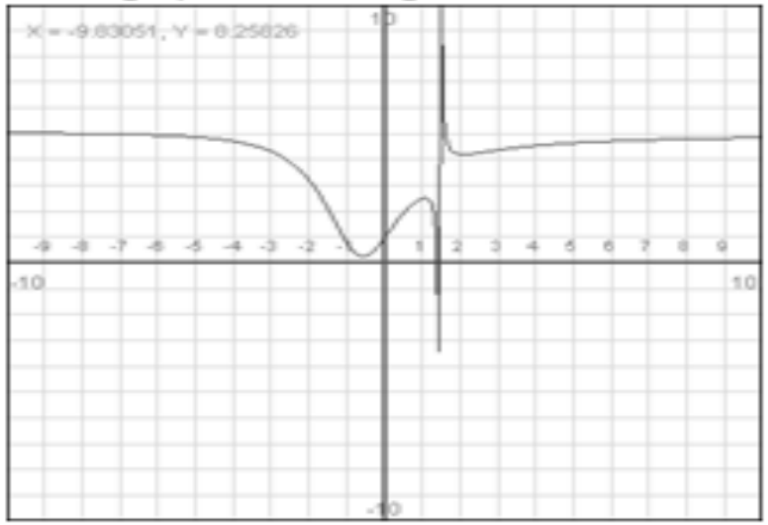
If $f(x) = 3$, what are the values of x?

If $f(x) = 0$, what are the values of x?

State the domain and range of $f(x)$.

On what intervals is the function increasing and decreasing?

2) The graph of $f(x)$ is given below.



State or estimate the value of:

$f(-3) =$ $f(1) =$ $f(0) =$

If $f(x) = 4$, what are the values of x?

If $f(x) = 5$, what are the values of x?

State the domain and range of $f(x)$.

On what intervals is the function increasing and decreasing?

What is occurring at approximately $x = 1.4$?