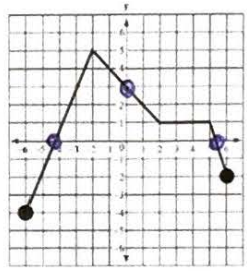
Student Notes: Day 1

SWBAT recognize key features from a graph.

Name: Key
Date: _____ Period: _____

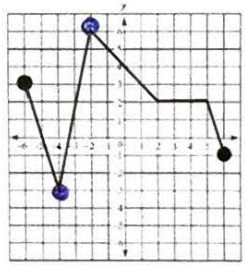
Domain: the input or x-values

Range: the output or y-values



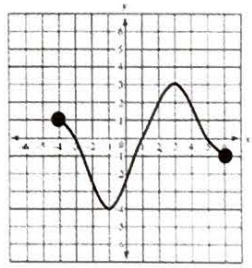
x-intercept: where the function crosses the x-axis

y-intercept: where the function crosses the y-axis



The maximum of a function is the largest output/range/y

The minimum of a function is the smallest output/range/y

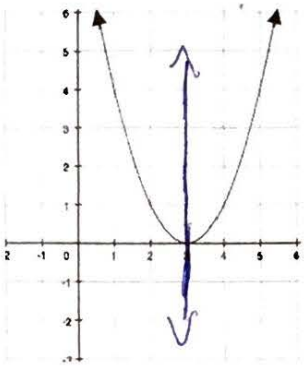


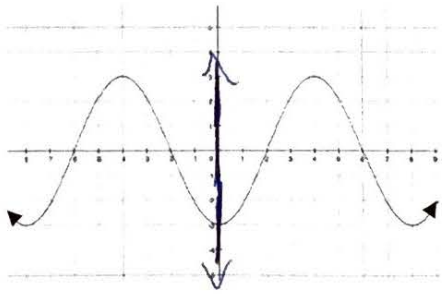
Increasing: going up (from left to right)

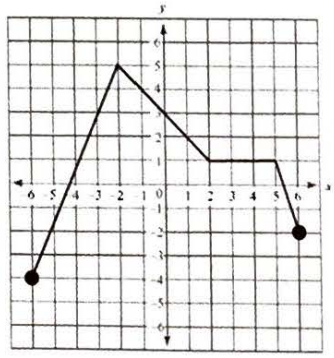
Decreasing: going down (from left to right)

Axis of symmetry: a line through a shape so that each side is a mirror image

If these figures have an axis of symmetry, draw it on.



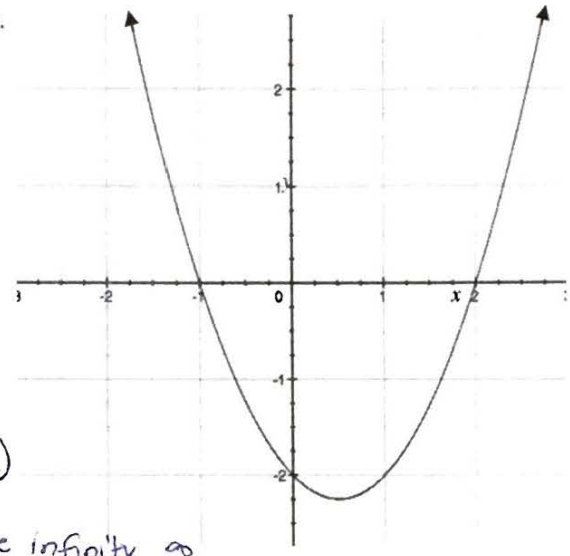




No axis

I DO

1. Find the key features of the function $f(x)$, graphed here.



a) Is the graph increasing or decreasing from $x = -2$ to $x = 0$?

decreasing

b) Is the graph increasing or decreasing from $2 < x < 3$?

increasing

c) x-intercept: $(-1, 0)$ and $(2, 0)$

d) y-intercept: $(0, 2)$

e) Evaluate $f(1)$ = where $x=1$, the point is $(1, -2)$ so $f(1) = -2$

f) Maximum: → positive infinity ∞

g) Minimum: point: $(0.5, -2.25)$ so $y = -2.25$

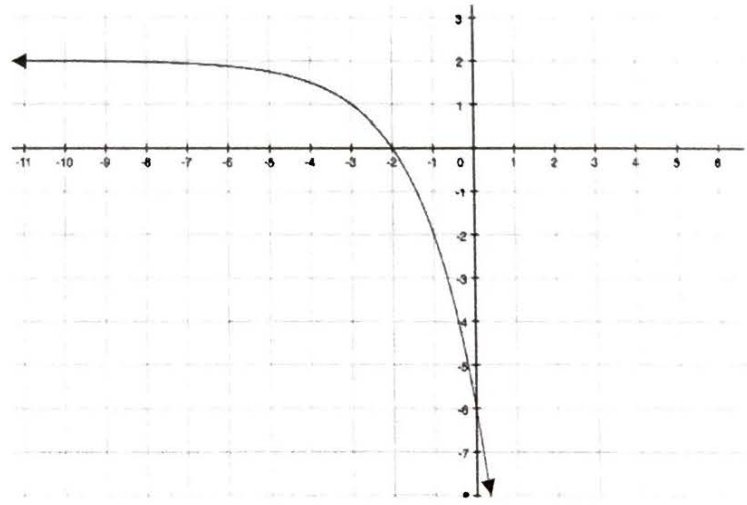
h) Domain: all x-values or $(-\infty, \infty)$

i) Range: $[-2.5, \infty)$

j) Axis of symmetry? yes, at $x = 0.5$

WE DO

2. Find the key features of the function $g(x)$ to the right.



a) Where is the graph increasing?

Not increasing

b) y-intercept: $y = -6$ or $(0, -6)$

c) x-intercept: $x = -2$ or $(-2, 0)$

d) Find $g(3)$ = Not present on graph

e) Maximum: on graph: $y = 2$

f) Minimum: on graph: none shown

g) Domain:

$(-\infty, \infty)$

h) Range:

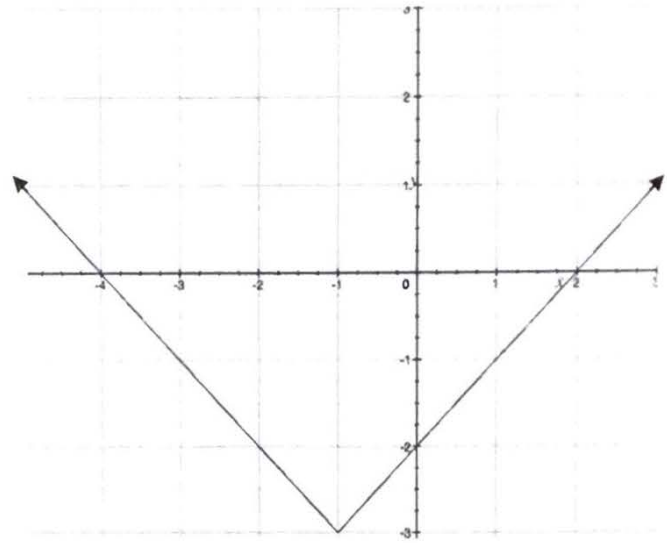
$(-\infty, 2)$

i) Axis of symmetry?

None

WE DO

3. Find the key features of the function $k(x)$ on the right.



a) Is the graph increasing from $x = -4$ to $x = -1$?

No, decreasing

b) x-intercept: $(-4,0)$ and $(2,0)$

c) y-intercept: $(0,-2)$

d) Find $k(-1) =$ -3

e) Maximum: none on graph

f) Minimum: $(-1,-3)$ or $y = -3$

g) Domain:

$(-\infty, \infty)$

h) Range:

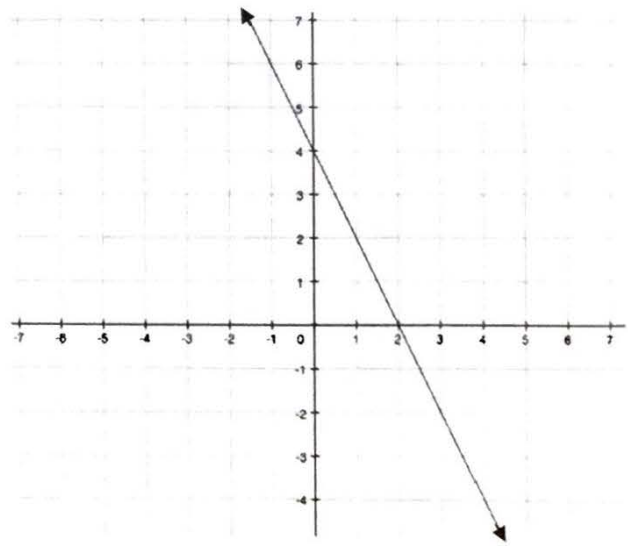
$[-3, \infty)$

i) Axis of symmetry?

$x = -1$

YOU TRY:

4. Find the key features of the function $d(x)$, graphed here.



a) Where is the graph decreasing?

at all points: $(-\infty, \infty)$

b) y-intercept: $(0,4)$

c) Find $d(4) =$ -4

d) Maximum: None on graph

e) Minimum: None on graph

f) Domain:

$(-\infty, \infty)$

g) Range:

$(-\infty, \infty)$