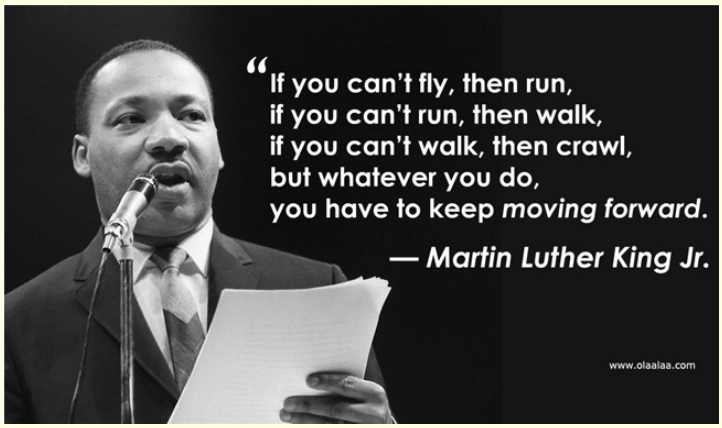
Warm Up:

Define the word **inequality**

Solving Inequalities

AGENDA:

- Objective- Students can solve linear inequalities in one variable, including equations with coefficients represented by letters.
- Define Inequalities
- One & Two Step Inequalities



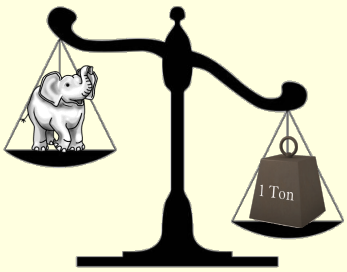
REMINDERS:

Students can define inequality.

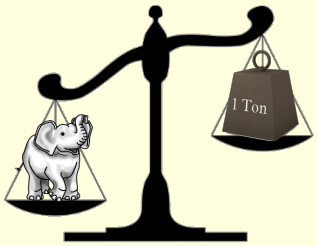
Inequality:

is like an equation that uses symbols for "less than" (<), "less than or equal to" (≤), "greater than" (>), and "greater than or equal to" (≥) where an equation uses a symbol for "is equal to" (=).

Students can explain inequalities.



Explain each situation shown on the balance scales using inequalities vocabulary.



Students can identify symbolic representation of inequalities.

Inequality Symbols	
Less Than <	*Greater Than* >
Less Than or Equal Too ≤	*Greater Than or Equal Too* ≥

Students can identify symbolic representation of inequalities.

Inequality Symbols	
Less Than <	*Greater Than* >
Less Than or Equal Too ≤	*Greater Than or Equal Too* ≥

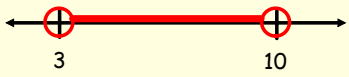
3 ____ 7 8 ____ -5 1 ____ 6

4 _____ 5 9 ____ 2

Students can identify symbolic representation of inequalities.

Set Notation: $3 < x < 10$

Number line:



Interval Notation: (3, 10)

Interval Notation: (description)	(diagram)
Open Interval: (a, b) is interpreted as $a < x < b$ where the endpoints are NOT included. (While this notation resembles an ordered pair, in this context it refers to the interval upon which you are working.)	$(1, 5)$
Closed Interval: $[a, b]$ is interpreted as $a \le x \le b$ where the endpoints are included.	$[1, 5]$
Half-Open Interval: $(a, b]$ is interpreted as $a < x \le b$ where a is not included, but b is included.	$(1, 5]$
Half-Open Interval: $[a, b)$ is interpreted as $a \le x < b$ where a is included, but b is not included.	$[1, 5)$
Non-ending Interval: (a, ∞) is interpreted as $x > a$ where a is not included and infinity is always expressed as being "open" (not included).	$(1, \infty)$
Non-ending Interval: $(-\infty, b]$ is interpreted as $x \le b$ where b is included and again, infinity is always expressed as being "open" (not included).	$(-\infty, 5]$

Students can identify symbolic representation of inequalities.

For each of the following in set notation,

a. Create a Number Line

b. Write in each of the following in Interval Notation

1. $x > 2$
2. $x \ge -4$
3. $-2 < x \le 7$
4. $0 \le x < 9$

Students can solve one-step linear inequalities with one variable.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

a) $x - 4 > 9$

b) $x + 6 \leq 4$

Students can solve one-step linear inequalities with one variable.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

c) $\frac{x}{3} \leq 4$

d) $9x > 36$

Students can solve two-step linear inequalities with one variable.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

a) $5x + 3 \leq 4$

b) $10x - 3 > 7$

Students can solve two-step linear inequalities with one variable.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

c) $\frac{x - 5}{2} > 4$

d) $13 + 2x < 1$

Students can solve linear inequalities with a negative coefficient.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

a) $-6x < 12$

b) $-x \leq 8$

When you mulply or divide by a negave number, you MUST switch the inequality sign.

Students can solve linear inequalities with a negative coefficient.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

c) $-2x + 6 \geq 8$

d) $17 - 3x > 2$

When you mulply or divide by a negave number, you MUST switch the inequality sign.

YOUR TURN!!

When you mulply or divide by a negave number, you MUST switch the inequality sign.

Solve the following inequalities for x.

Explain which values of x make this algebraic sentence true.

Draw a number line representing these values.

Write it in interval notation.

a) $4x + 7 > -5$

b) $\frac{x}{5} - 3 > 0$

c) $x + 9 > 6$

d) $x - 2 < 5$

e) $4x + 1 < 13$

f) $\frac{x}{-4} > 5$

g) $-3x < -12$

h) $\frac{x}{6} + 1 < 0$

i) $5x - 2 < -17$

Warm Up

What was done to both sides of the first inequality to give the second in each of the following below?

1) $x - 7 < 2$ to give $x < 9$

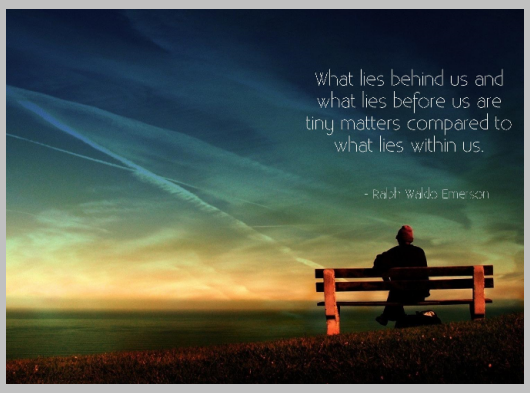
2) $3x \geq 15$ to give $x \geq 5$

3) $x + 10 > 0$ to give $x > -10$

4) $-6x < 12$ to give $x > -2$

5) $-x \leq 8$ to give $x \geq -8$

6) $\frac{x}{4} > 1$ to give $x < -4$



AGENDA:

- Do Now
- Homework Questions
- Objective
- Solving inequalities with the Distributive Property

REMINDERS:

Algebra Common Core

- Students can use the distributive property when solving an inequality.
- Students can explain each step in solving an inequality as following the equality of numbers asserted in the previous step, starting from the assumption that the original inequality has a solution.
- Students can write solutions to inequalities in interval notation.

RECALL:

ONE STEP	TWO STEP
$x + 4 > 3$	$-5x - 13 \leq 2$

Students can solve inequalities with the Distributive Property.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a number line representing these values. Write it in interval notation.

a) $5(x - 2) < 30$ b) $3(6 + x) \geq -36$ c) $2(x + 4) < 9$

Students can solve inequalities with the Distributive Property.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a number line representing these values. Write it in interval notation.

d) $2(4x - 9) - 6x > 0$ e) $-(x + 7) \geq 15$ f) $5(x - 2) - 4(x - 1) < 0$

Students can solve inequalities with the Distributive Property.

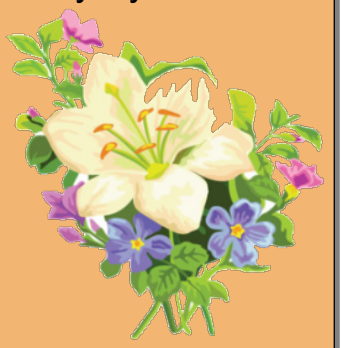
YOUR TURN: Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Write a list of these values. Write it in interval notation.

a) $3(5x + 4) < 42$ b) $5x - 2(2x + 1) > 8$ c) $4(r + 5) \geq 8$

d) $-6(a+2) + 7a \leq 12$ e) $-(2a - 6) + 3(a + 2) < 4$

Warm Up

Amanda has $40 to spend on flowers. She wants to buy a pair of red roses for $18 and the rest on lily flowers. Each lily costs $11. How many lily flowers can she purchase?



AGENDA:

- Do Now
- Homework questions
- Objective
- Solving Inequalities with Variables on Both Sides

REMINDERS:

Algebra Common Core

- Students can explain each step in solving an inequality as following the equality of numbers asserted in the previous step, starting from the assumption that the original inequality has a solution.
- Students can write solutions to inequalities in interval notation.

RECALL:

ONE STEP	TWO STEP	DISTRIBUTIVE
$\frac{x}{4} \geq 8$	$-2x + 12 < 4$	$2x - 2(x - 1) < 5$

Students can solve inequalities with variables on both sides.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a # line representing these values. Write it in interval notation.

a) $-2m - 27 \geq -5m - 6$ b) $9j + 3 < 8j + 4$ c) $5p + 10 \leq -18 + 12p$

Students can solve inequalities with variables on both sides.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a # line representing these values. Write it in interval notation.

d) $3m - 2 \leq 5m + 10$ e) $5a - 4 < 6a + 4$ f) $\frac{2}{3}x + 5 \geq \frac{1}{2}x + 10$

Students can explain each step when solving an inequality.

On each line provided, identify the property being used.

$-6y + 20 < 3y - 7$

$-20 \quad -20$ _____

$-6y < 3y - 27$

$-3y \quad -3y$ _____

$\frac{-9y}{-9} < \frac{-27}{-9}$

$y > 3$ _____

Students can solve inequalities with variables on both sides.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Write a list of these values. Write it in interval notation.

a) $6 - 6g \geq 8 - 5g$

b) $3t + 4 > 4t + 7$

c) $6d - 16 \leq -32 - 2d$

d) $5w + 8 > 3w + 14$

e) $5k + 7 > 8k - 8$

f) $\frac{2}{5}h - 6 > -7 + \frac{1}{2}h$

Students can explain each step when solving an inequality.

On each line provided, identify the property being used.

$7u + 8 < 14 + 9u$

$-8 \quad -8$ _____

$7u < 6 + 9u$

$-9u \quad -9u$ _____

$-2u < 6$

$-2 \quad -2$ _____

$u > -3$

Warm Up

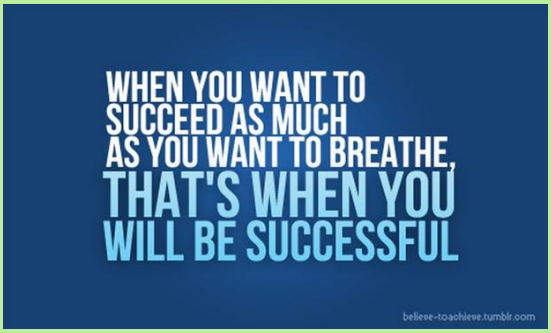
What was done to both sides of the both sides of the first inequality to give the second of the following?

a) $x - 7 < 2$ to give $x < 9$

b) $\frac{x}{2} \leq -9$ to give $x \leq -18$

c) $5x - 2 < -17$ to give $5x < -15$

d) $2(x - 6) > 3 - x$ to give $2x - 12 > 3 - x$



AGENDA:

- Do Now
- Homework Questions
- Objective
- Solving Multi Step Inequalities

REMINDERS:

Algebra Common Core

- Students can explain each step in solving an inequality as following the equality of numbers asserted in the previous step, starting from the assumption that the original inequality has a solution.
- Students can write solutions to inequalities in interval notation.

RECALL:

ONE STEP

$7x \leq 28$

TWO STEP

$\frac{x}{6} + 1 \leq 0$

DISTRIBUTIVE

$2(x - 5) > -30$

VARIABLES ON BOTH SIDES

$2x + 15 > 3 + 4x$

Students can solve inequalities with Multi Steps.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a number line representing these values. Write it in interval notation.

a) $3(x + 3) < 2(x + 6)$

b) $x + 5 > 3x - 2(x - 1)$

Students can solve inequalities with Multi Steps.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a number line representing these values. Write it in interval notation.

c) $4a - 3 - 2(4 - a) \leq 7a - 10$

d) $\frac{1}{2}(4x + 8) \leq 6x + 44$

Students can solve inequalities with Multi Steps.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a number line representing these values. Write it in interval notation.

e) $(x - 4)(x + 1) > x(x - 4)$

YOUR TURN

Students can solve inequalities with Multi Steps.

Solve the following inequalities for x. Explain which values of x make this algebraic sentence true. Draw a number line representing these values. Write it in interval notation.

a) $2(5p + 10) < 2(-18 + 12p)$

b) $5 + 7r \geq -(3-2r) - 3r$

c) $9z - (6 - z) > 12z - 10$

d) $(x + 2)(x - 3) \leq x(x - 2)$

e) $\frac{1}{3}(3x - 27) > 2(x - 5)$

REVIEW FOR QUIZ WARM UP

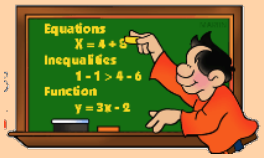
Warm Up

What happens to the direction of an inequality if...

a) the same number is subtracted from both sides?

b) both sides are multiplied by the same positive number?

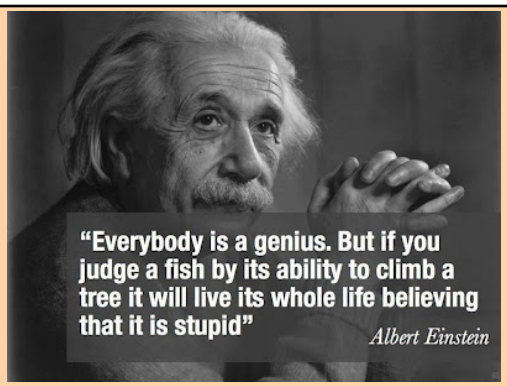
c) both sides are divided by the same negative number?



AGENDA:

- Do Now
- Objectives
- Translating an English sentence in an symbolic inequality

REMINDERS:



Algebra Common Core

OBECTIVES:

- Students can solve word problems that lead to inequalities.
- Students can explain each step in solving an inequality as following the equality of numbers asserted in the previous step, starting from the assumption that the original inequality has a solution.
- Students can write solutions to inequalities in interval notation.

Students can solve word problems that lead to inequalities.

Word Problems Solved by Inequalities

Frequently, word problems involve translating an English sentence into an inequality.

For example, Tony can spend at most $25 on a football.

This means that he must spend $25 or **less**.

Therefore, **at most** is translated as $\leq$.

Janet needs at least a 90 average for all her subjects to quality for the honor roll.

This means that she must have an average of 90 or **greater**.

Therefore, **at least** is translated as $\geq$.

$<$	$>$	$\leq$	$\geq$
Is less than	*Is greater than*	*Is less than or equal to*	*Is greater than or equal to*

Students can solve word problems that lead to inequalities.

Example One

Jamal is paid $150 a week plus a commission of $40 on each stereo he sells. How many must he sell to make at least $350 a week?

STRATEGY Let x = the number he can sell.

Think: salary **plus** commission is at least 350

salary **plus** ☐ is at least 350

salary **plus** ☐ is at least 350

☐

Solve the translated inequality...

Students can solve word problems that lead to inequalities.

Example Two

Mona rents a care $ 175 a week, plus $0.15 a mile. How far can she travel if she wants to spend at most $250?

STRATEGY Let x = the number of miles she can travel.

fixed cost + cost per mile • number of miles is at most 250

Students can solve word problems that lead to inequalities.

Your Turn...

1. An amusement park charges $6 for admission and $0.70 for each ride. If you go to the park with $20, what is the maximum number of rides you can go on?
2. You want to start a business making custom t-shirts. It will cost you $48 for supplies. It costs you $4.50 to make each t-shirt which you will sell for $8.50. Write an inequality showing how many you must sell to earn a profit of at least $600. Solve. Explain.
3. You and you friends have a total of $12.50 to spend on pizza. A large pizza with cheese costs $10, plus $0.50 for each additional topping. What's the most toppings you can afford?
4. Brian is paid $150 a week, plus a commission of $15 on each camera he sells. How many must he sell to make at least $600 a week?

Warm Up

Translate the following algebraic inequalities into sentences.

a) 10 times a number is at least 60

b) 39 is less than the difference of 21 and a number.

When one door closes, another opens; but we often look so long and so regretfully upon the closed door that we do not see the one that has opened for us.

~ Alexander Graham Bell~

AGENDA:

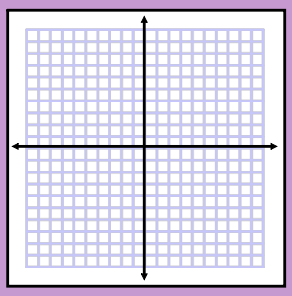
- Do Now
- Objectives
- Master of Translating: Translating an English sentences and phrases into algebraic expression, equations, and inequality

REMINDERS:

- Students can solve word problems that lead to inequalities.
- Students can explain each step in solving an inequality as following the equality of numbers asserted in the previous step, starting from the assumption that the original inequality has a solution.
- Students can write solutions to inequalities in interval notation.
- Students can complete Master of Translating.

Warm Up

Graph the function y = 2x + 3

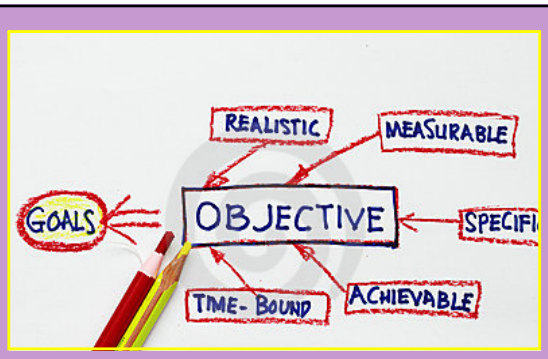


How many regions does the line separate the coordinate plane into?

AGENDA:

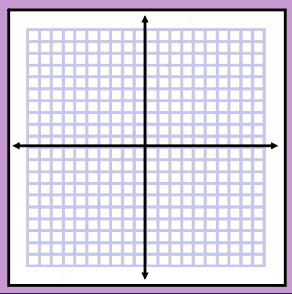
- Do Now
- Objectives
- Graphing Linear Inequalities

REMINDERS:

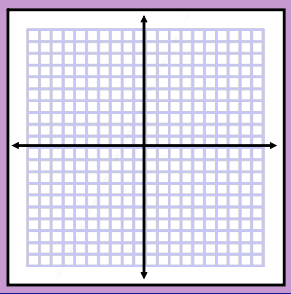


- Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

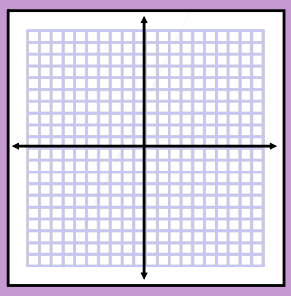
Graphing the iequality **y < 2x + 3**



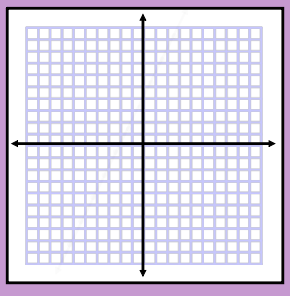
Graphing the inequality **y > 2x + 3**



Graphing the inequality **y ≤ 2x + 3**



Graphing the inequality **y ≥ 2x + 3**



SUMMARY

Inequality Symbol	Line	Shade
>	Dotted	Up
<	Dotted	Down
≥	Solid	Up
≤	Solid	Down

Graph the inequality:

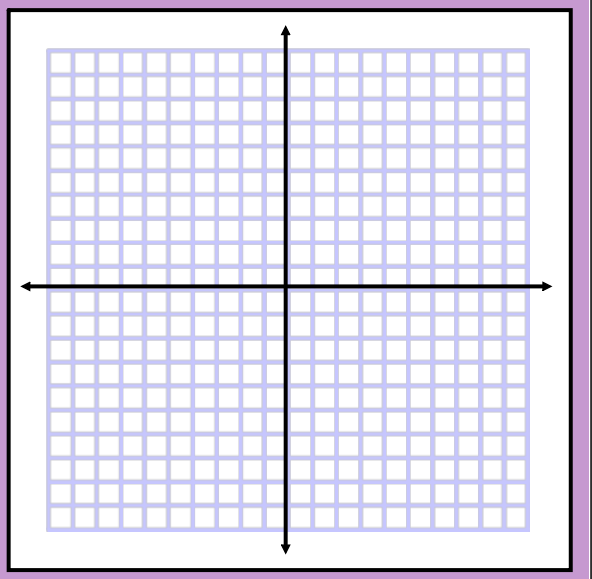
$y \geq x - 5$

Slope? _____

y-intercept? _____

Line? _____

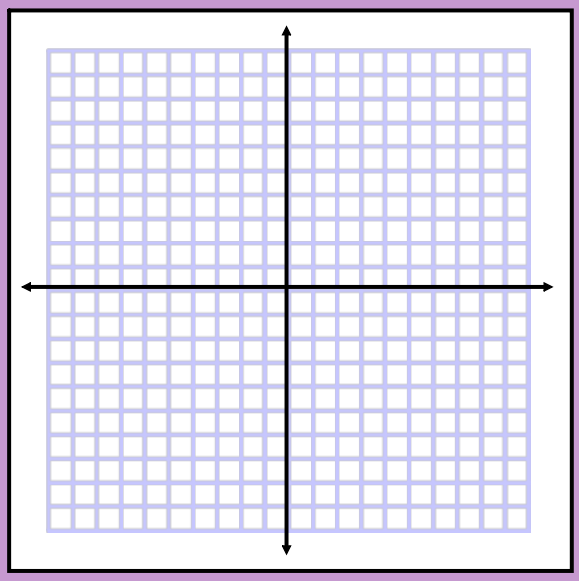
Shade? _____



SOLUTIONS: _____

Graph the inequality:

$y < 2x + 1$



Slope? _____

y-intercept? _____

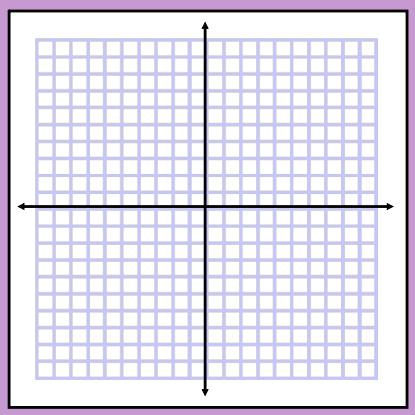
Line? _____

Shade? _____

SOLUTIONS: _____

Graph the inequality:

$y < 3x$



Slope? _____

y-intercept? _____

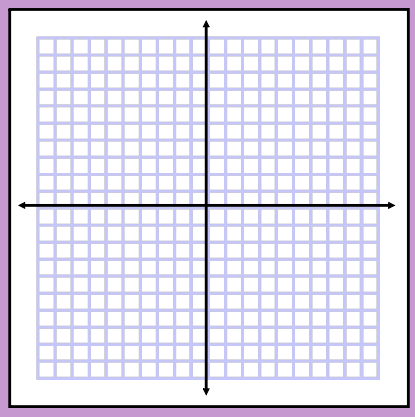
Line? _____

Shade? _____

SOLUTIONS: _____

Graph the inequality:

$y \leq -2x + 2$



Slope? _____

y-intercept? _____

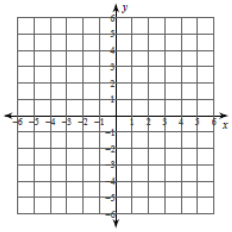
Line? _____

Shade? _____

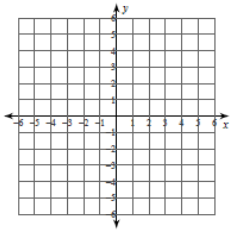
SOLUTIONS: _____

YOUR TURN

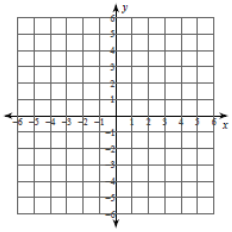
1) $y \geq -3x + 4$



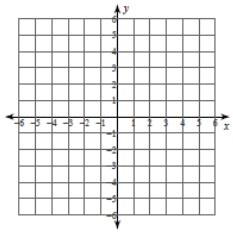
2) $y \leq \frac{3}{5}x - 5$



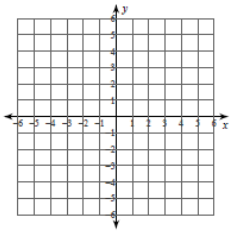
3) $y > -x - 5$



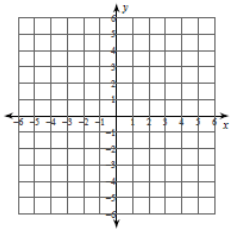
4) $y > -4$



5) $y > 2x - 5$



6) $y \geq \frac{7}{4}x + 2$



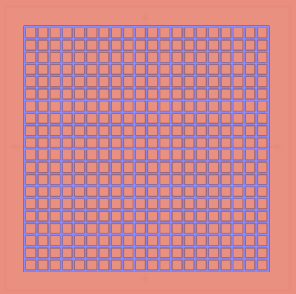
Warm Up

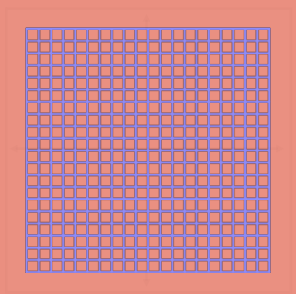
Solve the following inequality for y:

$2x - 3y < 9$

Could the following inequalities be graphed on a coordinate plane?

$x \leq 6$ $y > -4$





AGENDA:

- Do Now
- Objectives
- Graphing Linear Inequalities Practice: Finish Worksheet from yesterday.

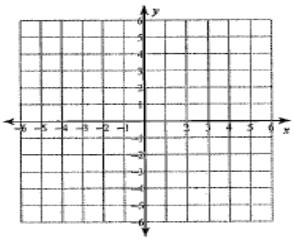
REMINDERS:

AGENDA:

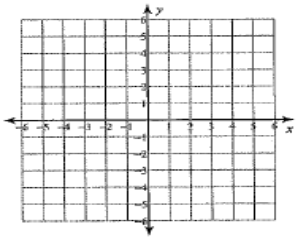
- Do Now
- Homework Questions
- Writing linear equations

REMINDERS:

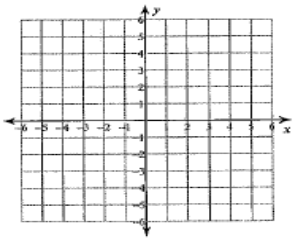
1) $y \geq -3x + 4$



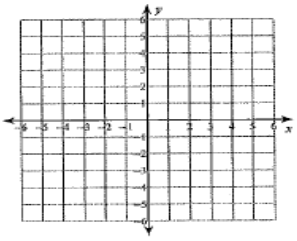
2) $y \leq \frac{3}{5}x - 5$



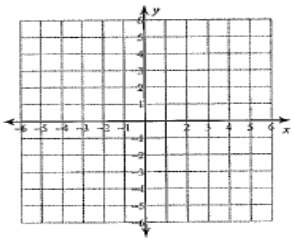
3) $y > -x - 5$



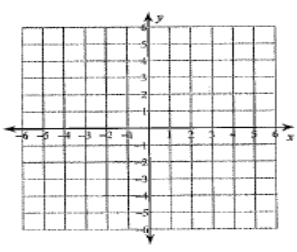
4) $y > -4$



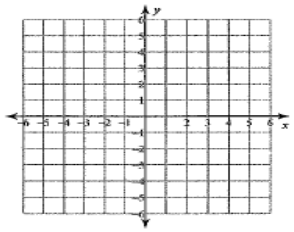
5) $y > 2x - 5$



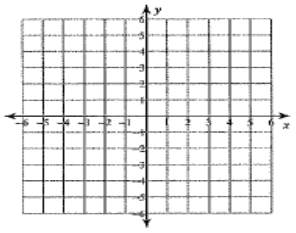
6) $y \geq \frac{7}{4}x + 2$



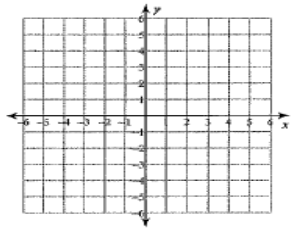
7) $x < -5$



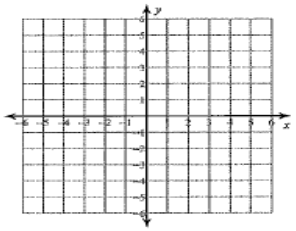
8) $y \leq \frac{4}{3}x - 4$



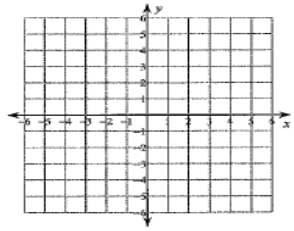
9) $3x - 2y < 10$



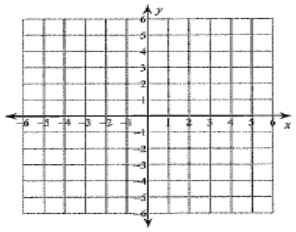
10) $5x - 3y \leq -15$



11) $y \geq 4$

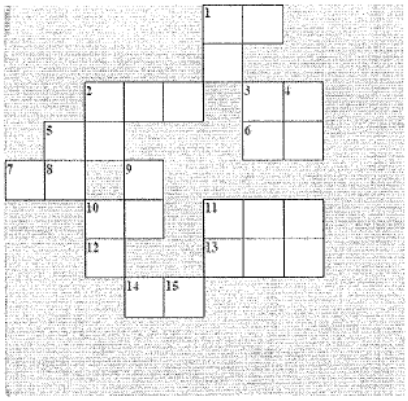


12) $x - y > 2$



Inequalities

Complete the crossword puzzle.



Across

1 100 - x < 41
2 x + 9 < 120
3 x + 4 < 20
6 x - 4 > 20
7 2/5x <18
8 2x > 10
10 x - 5 < 5
11 x -45 > 189
12 x + 8 < 15
13 x + 1 < 210
14 3x> 99

Down

1 2x < 100
2 1/2 m <7
3 2x < 24
4 x/8 > 8
5 33 + x < 88
9 5x > 100
10 20 < x + 3
11 x + 6 < 28
15 8d < 24

Warm Up

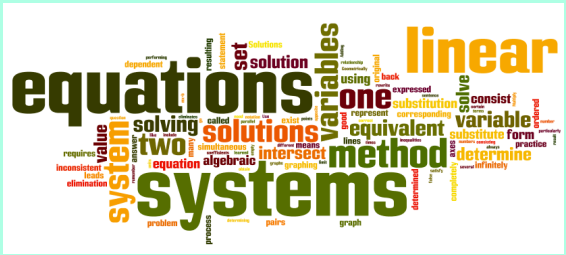
FOR THE FOLLOWING LINEAR INEQUALITIES, IDENTIFY WHETHER YOU'D HAVE A SOLID OR DOTTED LINE AND IF YOU'D SHADE UP OR DOWN.

1. $Y \geq -2X + 3$
2. $Y < X - 1$
3. $Y \geq 2$
4. $Y < 3$
5. $Y \leq -X - 3$

Solving Systems of Linear Inequalities

AGENDA:

- Do Now
- Objectives
- Graphing Systems of Linear Inequalities



REMINDERS:

- Student's can graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Names of Group: _____

Period: _____

Algebra Common Core PI Lesson on Systems of Inequalities

Read all of the directions carefully. With your partner, underline all key words. Markers are available for you to use. **Work together to determine the solutions.** Refer to your packet if/ when needed.

Step 1: Rip off the sheet of graph paper at the end of this packet. Write the names of your group members on the graph paper.

Step 2: Solve this linear inequality for y. $y + 2x \geq 4$

Step 3: Identify the slope of this linear inequality. m = _____

Step 4: Identify the y- intercept of this inequality. b = _____

Step 5: Determine if this "line" would be solid or dotted. _____

Step 6: Determine if you will shade "up" or "down". _____

Step 7: Graph this linear inequality on your graph paper using one of your markers. Be sure to shade appropriately! Label you inequality.

Step 8: Solve this linear inequality for y. $y + 1 > x$

Step 9: Identify the slope of this linear inequality. m = _____

Step 10: Identify the y- intercept of this inequality. b = _____

Step 11: Determine if this "line" would be solid or dotted. _____

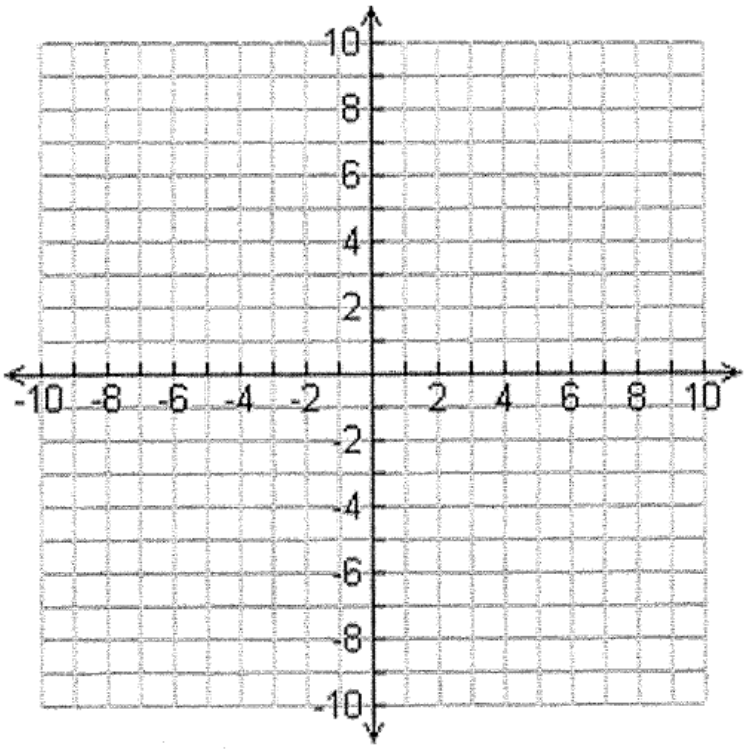
Step 12: Determine if you will shade "up" or "down". _____

Step 13: Graph this linear inequality on the same graph paper using your other marker. Be sure to shade appropriately! Label you inequality.

Step 14: Put an "S" where the shadings overlap.

Step 15: Name 3 points that are solutions to your system of inequalities. HINT- name 3 points that fall in your "S".

Names of Group Members: _____



Warm Up

THE FOLLOWING LINEAR INEQUALITIES CAN'T BE GRAPHED IN THEIR CURRENT STATE. MAKE THEM SO YOU CAN GRAPH THEM.

1) $4x - 3y \leq$

2) $2x + y \geq 2$

Nov 25-10:43 AM

- Student's can graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Nov 25-10:43 AM

Tell whether the ordered pair is a solution of the given system.

1. $(2,-2)$; $\begin{cases} y < x-3 \\ y > -x+1 \end{cases}$ _____

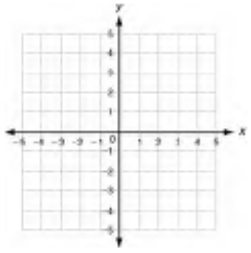
2. $(2,5)$; $\begin{cases} y > 2x \\ y \geq x+2 \end{cases}$ _____

3. $(1,3)$; $\begin{cases} y \leq x+2 \\ y > 4x-1 \end{cases}$ _____

Nov 25-10:43 AM

Graph the system of linear inequalities. a. Give two ordered pairs that are solutions. b. Give two ordered pairs that are not solutions.

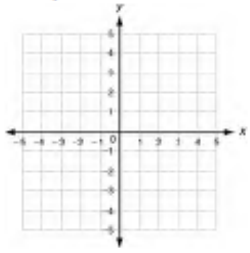
4. $\begin{cases} y \leq x+4 \\ y \geq -2x \end{cases}$



a. _____

b. _____

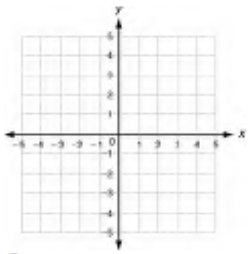
5. $\begin{cases} y \leq \frac{1}{2}x+1 \\ x+y < 3 \end{cases}$



a. _____

b. _____

6. $\begin{cases} y > x-4 \\ y < x+2 \end{cases}$

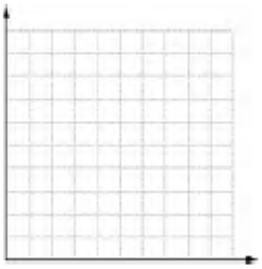


a. _____

b. _____

Nov 25-10:43 AM

7. Charlene makes $10 per hour babysitting and $5 per hour gardening. She wants to make at least $80 a week, but can work no more than 12 hours a week.



a. Write a system of linear equations.

b. Graph the solutions of the system.

c. Describe all the possible combinations of hours that Charlene could work at each job.

d. List two possible combinations.

Nov 25-10:43 AM

REVIEW FOR QUIZ WARM UP

AGENDA:

- **OBJECTIVE:**
  - > Students can determine where a function is increasing and decreasing.
  - > Students can determine the range given a domain of a piecewise function.
- **REMINDERS:**

The minute you think of giving up, think of the reason why you held on so long.

Nov 21-9:43 AM

Increasing/ Decreasing Functions

A function is ~~increasing~~ when the ~~slope is~~ .

A function is ~~decreasing~~ when the ~~slope is~~ .

A function is ~~constant~~ when the ~~slope is~~

In General,

If the slope is…

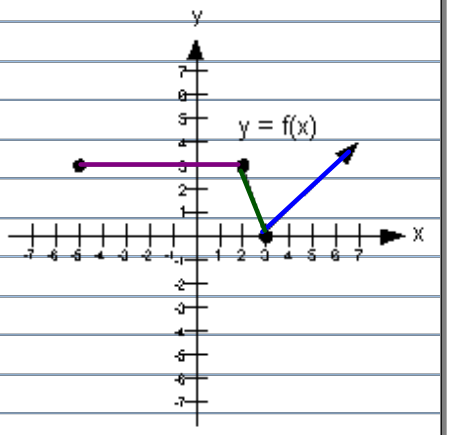
Positive	Line increases	↗
Negative	Line decreases	↘
Zero	Horizontal Line	→
Undefined	Vertical Line	↑

Nov 21-9:43 AM

Increasing/ Decreasing Functions

We will use ~~INTERVAL NOTATION~~ or ~~SET NOTATION~~ when we write the ~~intervals of increase and decrease~~. Intervals of increase or decreae are always ~~CLOSED~~!!!

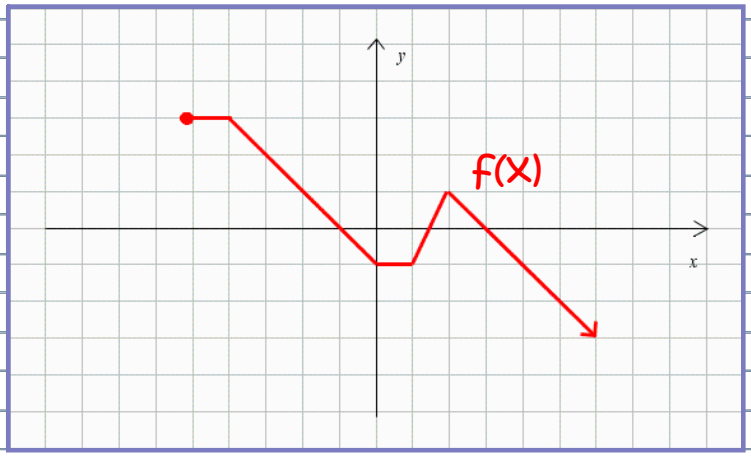
- Where is f(x) increasing?
- Where is f(x) decreasing?
- Where is f(x) constant?



Nov 21-9:43 AM

Increasing/ Decreasing Functions

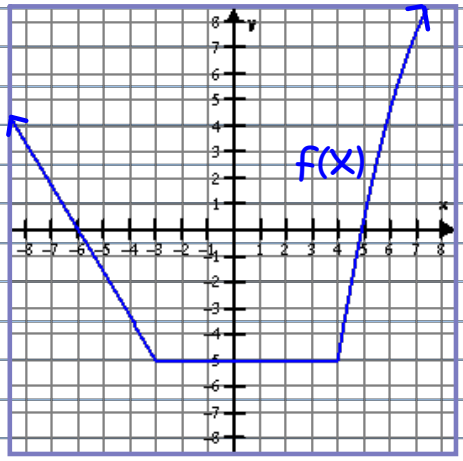
- Where is f(x) increasing?
- Where is f(x) decreasing?
- Where is f(x) constant?



Nov 21-9:43 AM

Increasing/ Decreasing Functions

- Where is f(x) increasing?
- Where is f(x) decreasing?
- Where is f(x) constant?

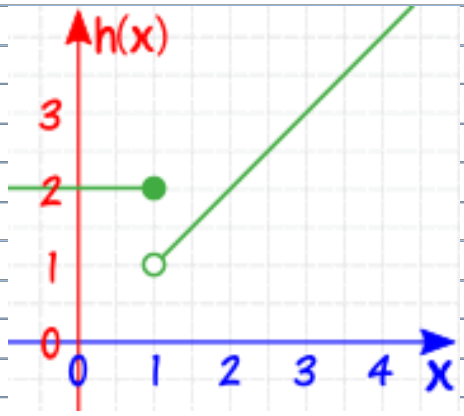


Nov 21-9:43 AM

Increasing/ Decreasing Functions

Let's take a look at a piecewise function.

Remember, a ~~piecewise function~~ is simply a function made up of 2 or more "pieces." These pieces can be linear, quadratic, exponential, etc.



You Try:

1. Evaluate h(3).
2. Evaluate h(0)
3. Evaluate h(1).

Nov 21-9:43 AM

Increasing/ Decreasing Functions

When you are asked to ~~evaluate a piecewise function at a specific x- value~~, you must use the ~~closed value for the y-value.~~

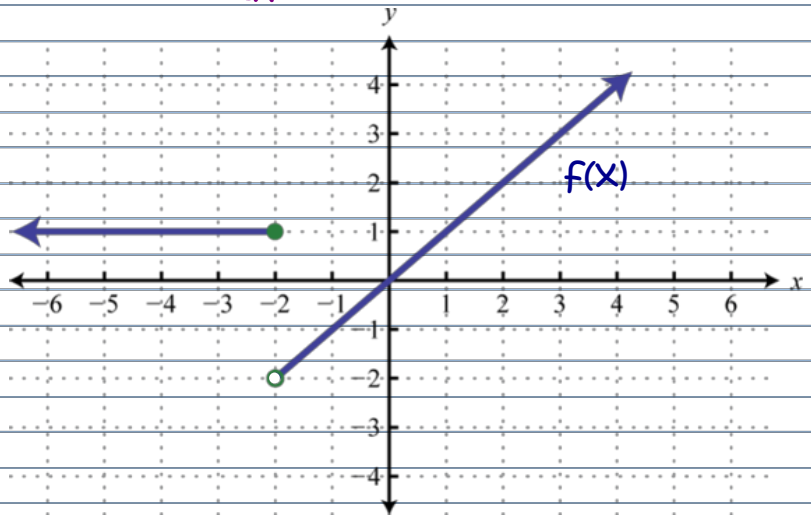
~~Example:~~

Evaluate:

a. f(-4)

b. f(2)

c. f(-2)



Nov 21-9:43 AM

Increasing/ Decreasing Functions

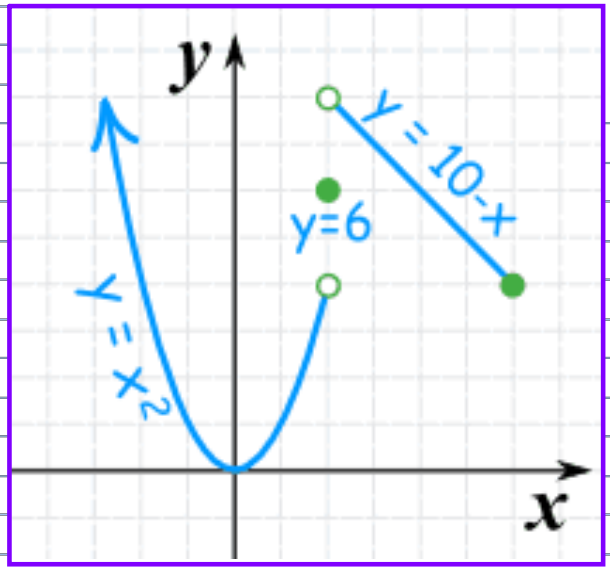
~~Example:~~

Evaluate:

a. y(0)

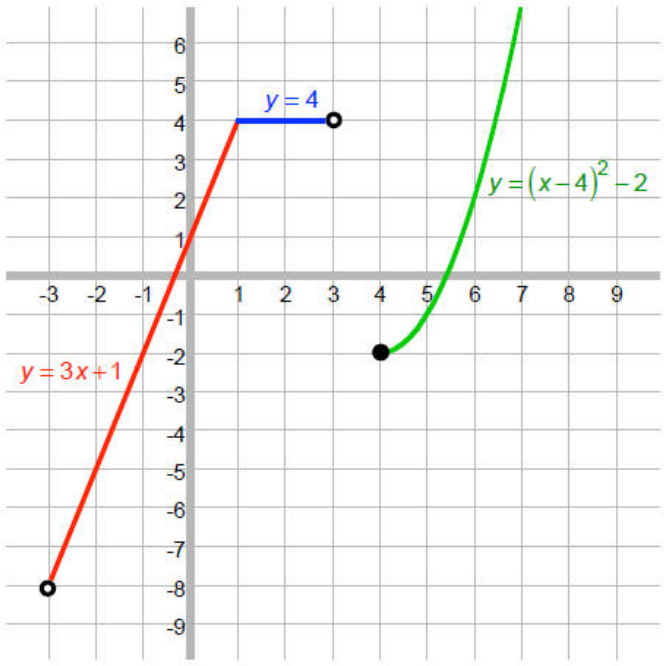
b. y(6)

c. y(2)



Nov 21-9:43 AM

Increasing/ Decreasing Functions



~~Exit Ticket:~~

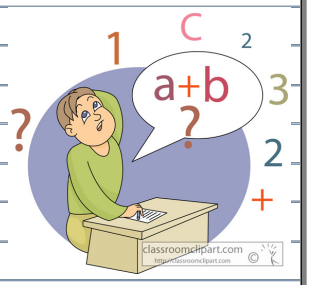
- Determine where f(x) is increasing and decreasing.
- Evaluate f(4).

Nov 21-9:43 AM

WARM UP

Given $f(x) = 3x - 1$ and $g(x) = -2 + x^2$, evaluate the following:

1. f(2)
2. g(2)
3. g(-1)
4. f(-5)
5. g(-3)



Nov 21-2:33 PM

AGENDA:

- **OBJECTIVE:**
  - Students can determine where a function is increasing and decreasing.
  - Students can determine the range given a domain of a piecewise function.
- **REMINDERS:**

Nov 21-2:33 PM

Increasing/ Decreasing Functions

Class Work:

In pairs or independently, please complete the following problems. Please hand this in before class ends. If you finish, please let me know and I have Quick Checks for you to work on for extra credit.

Nov 21-9:43 AM

Increasing/ Decreasing Functions

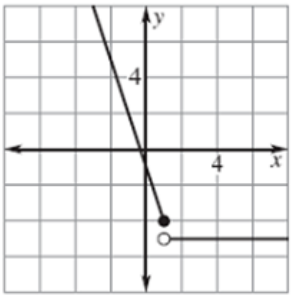
1. Determine the intervals of increase and decrease for each function given.

2. Evaluate:

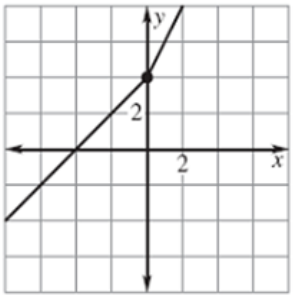
   a. f(0)

   b. f(1)

A.



B.



Pay attention to the scale on the graph!

Nov 21-9:43 AM

Increasing/ Decreasing Functions

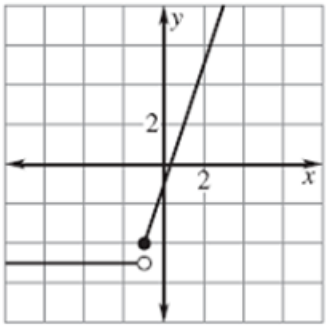
3. Determine the intervals of increase and decrease for each function given.

4. Evaluate:

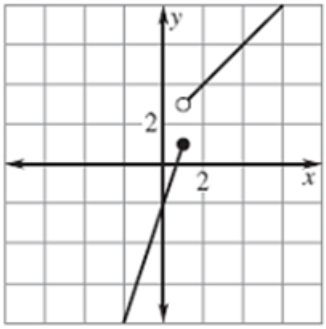
   a. f(-1)

   b. f(1)

C.



D.



Pay attention to the scale on the graph!

Nov 21-9:43 AM

Increasing/ Decreasing Functions

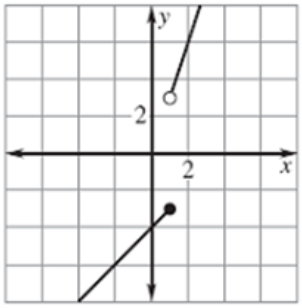
5. Determine the intervals of increase and decrease for each function given.

6. Evaluate:

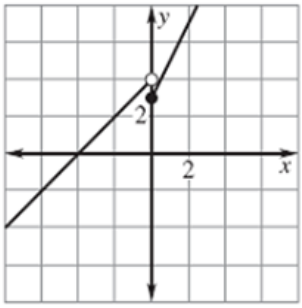
a. f(0)

b. f(1)

E.



F.



Pay attention to the scale on the graph!

Nov 21-9:43 AM

Increasing/ Decreasing Functions

BONUS (+5 on your next quiz!)

The admission rates at an amusement park are as follows.

Children 5 years old and under: free

Children between 5 years and 12 years, inclusive: $10.00

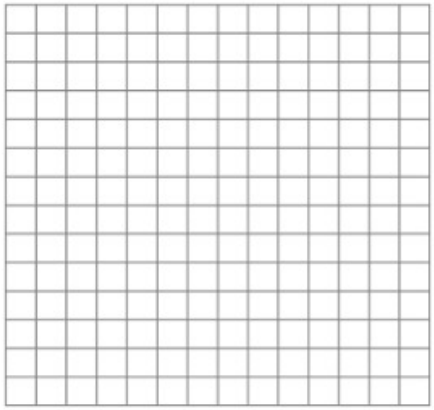
Children between 12 years and 18 years, inclusive: $25.00

Adults: $35.00

a) Write a piecewise function that gives the admission price for a given age

b) Graph the function.

*Choose an appropriate scale!



Nov 21-9:43 AM

Do NOW:

Review

AGENDA:

REMINDERS: