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Date:_____

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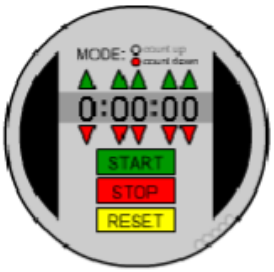
http://www.mathvizza.com

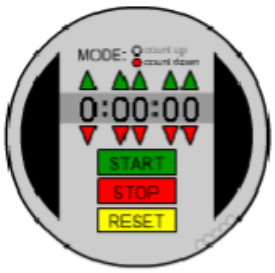
Bell Work

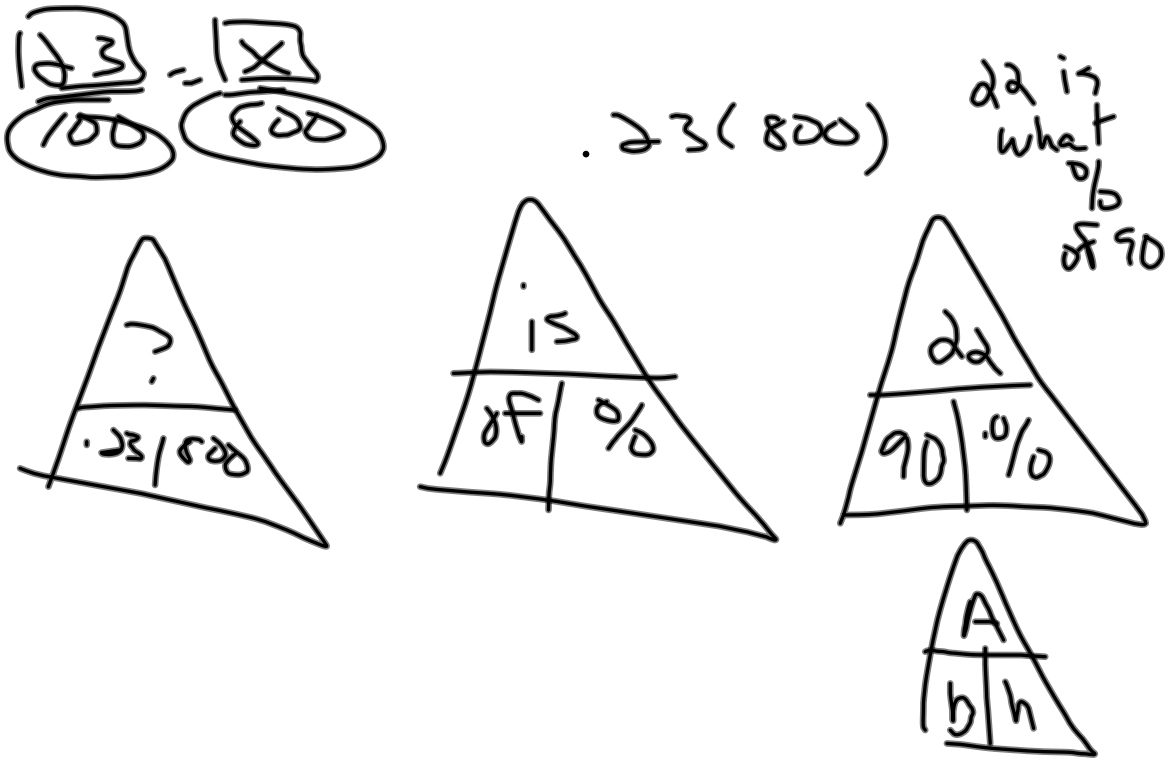


Directions : Please solve by extracting the root. Give and exact answer and an estimated answer rounded to the hundredth.

1. $2x^2+1=13$

2. $2(x-4)^2=20$

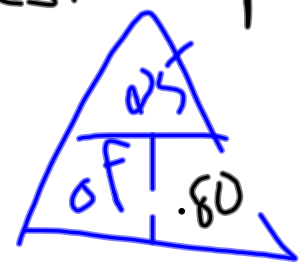


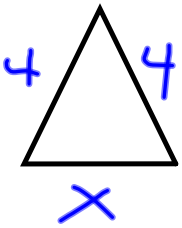

123 = x
100 800
.23(800)
22 is what % of 90
?
.23 800
15
of %
22
90 .%
A
b h

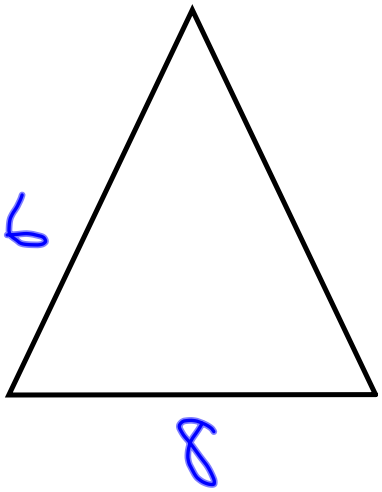
20 X-25

You pd. $25 for a shirt that was 20% off. what was. o.p.

$\frac{80}{100} = \frac{25}{X}$







$$\frac{4}{6} = \frac{x}{8}$$

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Objectives

1. The students will solve quadratic inequalities in 1 variable.

2. The students will solve and graph quadratic inequalities in 2 variables.

Some Reminders

1. When we divide both sides of an inequality by a negative, we need to flip the symbol.

2. When we graph > or < we use a(n) open dot.

3. When we graph ≥ or ≤ we use a(n) closed dot.

4. When we graph a < or > inequality in two variables we use a dotted line.

5. When we graph a ≤ or ≥ inequality in two variables we use a solid line.

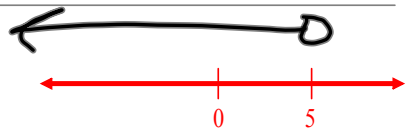
Example

$-x^2+6x+1<0$

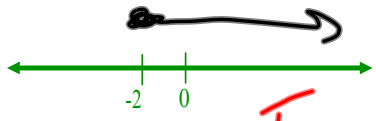
$-1 \quad -1 \quad -1 \quad -1$

$x^2-6x-1>0$

$x<5$



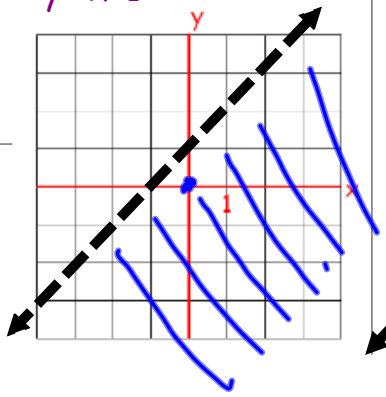
$x \geq -2$



0,0

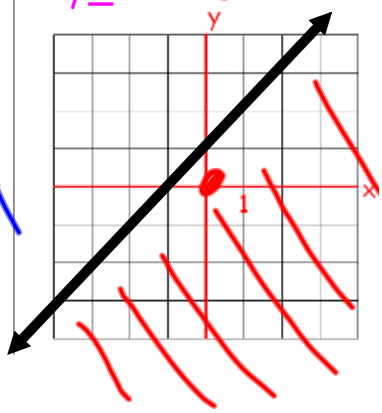
$y < x+1$

$0 < 0+1$



$y \leq x+1$

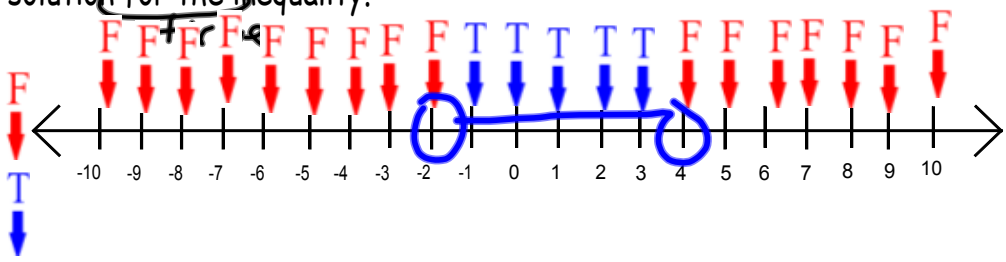
$0 \leq 0+1$



Discovery-This is WHY we do it

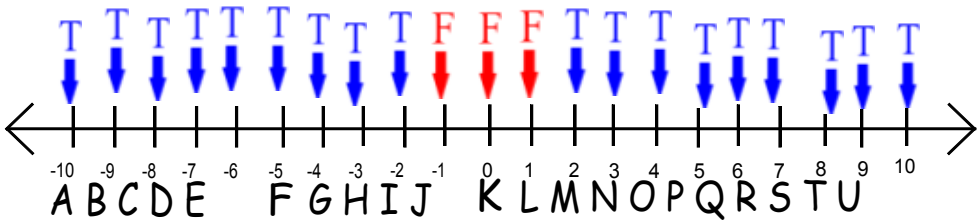
Directions : Please evaluate the following for your value of x and determine if it is a solution for the inequality.

1. $x^2-2x-8<0$



F T T

2. $4x^2-9>0$



Steps - This is HOW we do it - One Variable

1. Set the inequality equal to zero.
2. **Solve** the quadratic inequality
   - Factor with zero-product property
   - Quadratic Formula
3. Graph the critical points.
4. Pick three test points and evaluate them.
5. Graph the true portion on a number line.

Example 1. $x^2-5x-14<0$

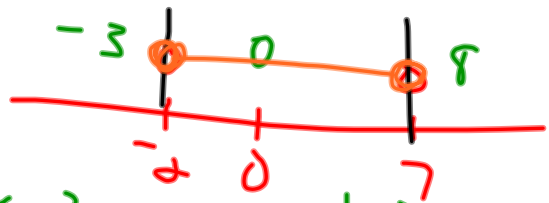
-14, -7, 2

$x^2-5x-14=0$

$(x-7)(x+2)=0$

$x-7=0 \quad x+2=0$

$x=7 \quad x=-2$



$(-3)^2-5(-3)-14<0$

$9+15-14<0$

$10<0$ F

$0^2-5(0)-14<0$

$-14<0$ T

$8^2-5(8)-14<0$

$64-40-14<0$

$24-14<0$

$10<0$ F

Example 2. $-2x^2+3<-x$

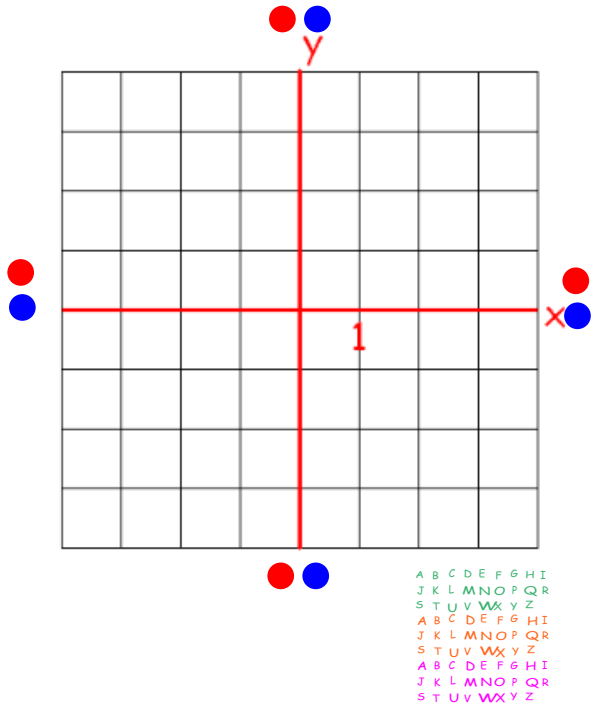
$-2x^2+x+3=0$

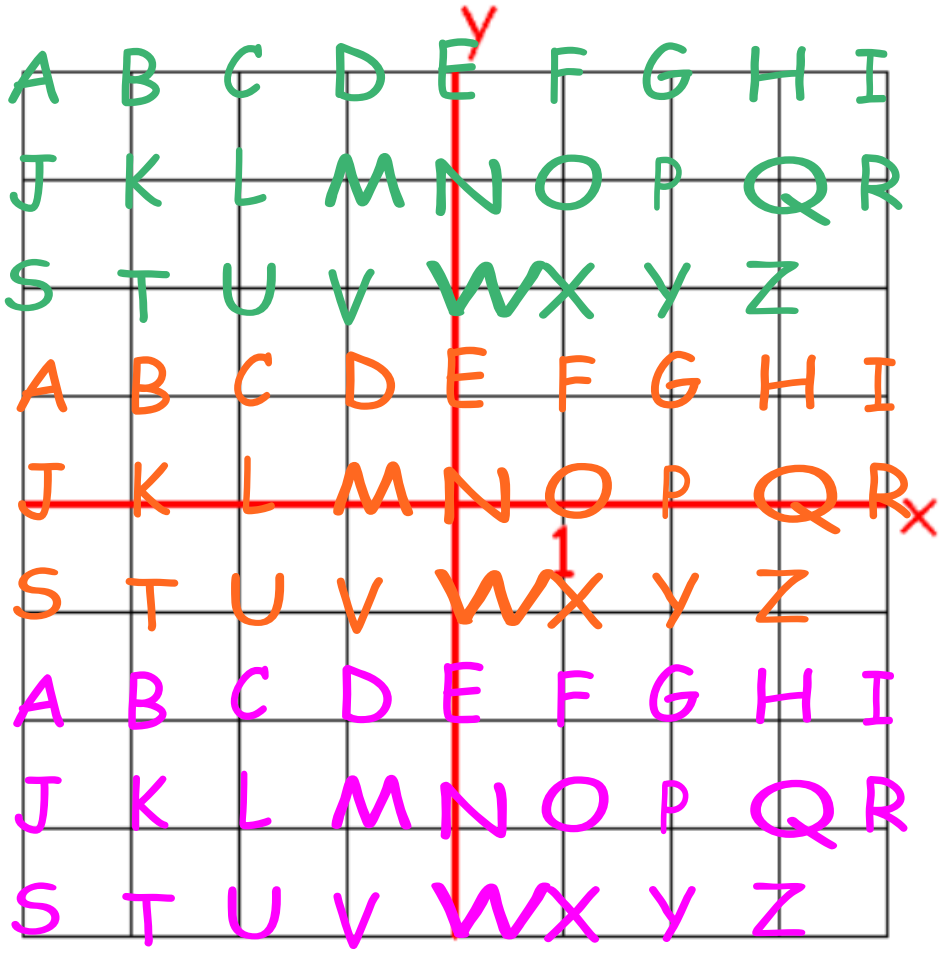
$2x^2-x-3=0$

This is WHY We Do It

Directions : Evaluate the points indicated by your letter for the expression below. There are three of them.

$y \geq x^2-2x-2$

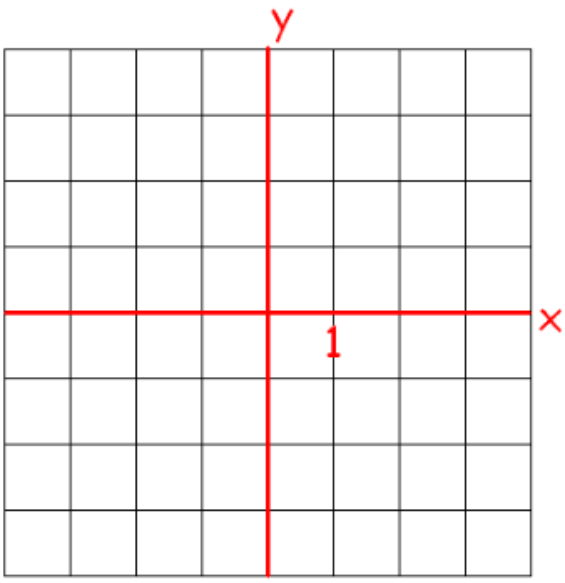



y
A B C D E F G H I
J K L M N O P Q R
S T U V W X Y Z
A B C D E F G H I
J K L M N O P Q R
x
1
S T U V W X Y Z
A B C D E F G H I
J K L M N O P Q R
S T U V W X Y Z

Steps - This is HOW we do it - Two Variables

1. Graph the quadratic
   (vertex form or standard form)
2. Test a point.
3. Shade the true region.

Example 1 $y<2(x+3)^2-4$



Steps - This is HOW we do it

1. Graph the quadratic
   (vertex form or standard form)
2. Test a point.
3. Shade the true region.

Example 2 $y \geq x^2-2x-1$