

$$(5 + \sqrt{-9})(2 - \sqrt{-16})$$

$$(5 + 3i)(2 - 4i)$$

$$10 - 20i + 6i - 12i^2 \quad i^2 = -1$$

$$22 - 14i$$

$$\left(\sqrt{x+2}\right)^2 = \left(4 + \sqrt{x+6}\right)^2$$

$$x+2 = (4 + \sqrt{x+6})(4 + \sqrt{x+6})$$

$$x+2 = 16 + 4\sqrt{x+6} + 4\sqrt{x+6} + x+6$$

$$x+2 = x+22 + 8\sqrt{x+6}$$

$$\frac{-20}{8} = \frac{8\sqrt{x+6}}{8}$$

$$\left(-\frac{5}{2}\right)^2 = \left(\sqrt{x+6}\right)^2$$

$$\frac{25}{4} = x+6$$

$$\frac{24}{4}$$

$$\frac{1}{4} = x$$

$$x^2 + 3x + 8$$

$$x^2 + 3x - 5$$

$$x = y^2$$

$x$	$y$
1	-1
4	2
4	-2
1	1
0	0

X

-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1

-1

-2

-3

-4

-5

-6

-7

-8

-9

-10

10

9

8

7

6

5

4

3

2

1

0

1

2

3

4

5

6

7

8

9

10

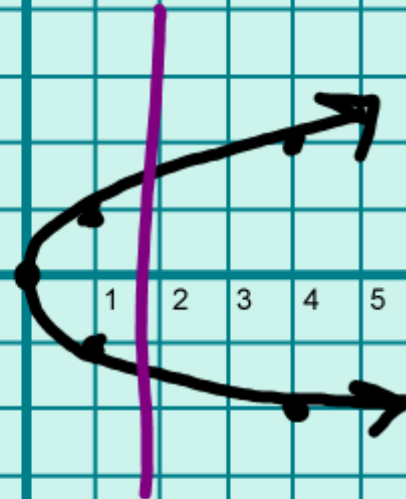
11

12

13

14

Y



$$4. (x-h)^2 + (y-k)^2 = r^2$$

Center  
(h, k)

$$(x-3)^2 + (y+2)^2 = 3^2$$

Radius  
r

$$(x-3)^2 + (y+2)^2 = 9$$

Circle  $(x-h)^2 + (y-k)^2 = r^2$

Quadratic  
Formula  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

distance  
formula  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Continuous  
Compounding  $A = Pe^{rt}$

Slope  $m = \frac{y_2 - y_1}{x_2 - x_1}$

## Vertical Asymptotes

denominator  $\neq 0$

$$y = \frac{2}{x-4} \quad x=4$$

## Horizontal Asymptotes

$|r|$

$n < m$  y-axis

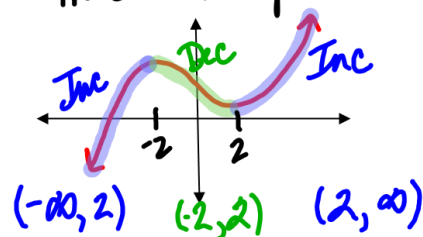
$n = m$  leading coefficients

$$y = \frac{a}{b} \quad \begin{array}{l} \text{numerator} \\ \text{denominator} \end{array}$$

$n > m$  none

x-intercept  $y=0$   
y-intercept  $x=0$

Increasing : Decreasing  
Trace with pencil



# Classify

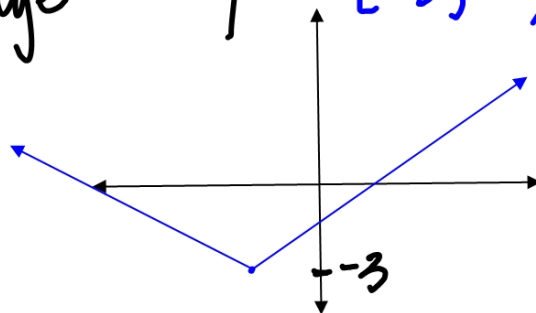
1 Answer      Consistent  
Independent

Infinitely Many  
Solutions      Consistent  
Dependent

No Solution      Inconsistent

Domain       $x$        $(-\infty, \infty)$

Range       $y$        $[-3, \infty)$



$\cup$  Union  
Both



$$10. \left( x^2 - 2x + 5 \right)^{\frac{2}{3}} = 4^{\frac{3}{2}}$$

$$x^2 - 2x + 5 = 8$$

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

$$(x - 3)(x + 1) = 0$$

$$x - 3 = 0 \quad x + 1 = 0$$

$$x = 3 \quad x = -1$$

Check

$$(3^2 - 2(3) + 5) = 4$$

$$8^{\frac{2}{3}} = 4$$

$$((-1)^2 - 2(-1) + 5)^{\frac{2}{3}} = 4$$

$$(1 + 2 + 5)^{\frac{2}{3}} = 4$$

$$8^{\frac{2}{3}} = 4$$

