

# **HYPERBOLA VISUAL SUMMARY 2- LINES OF SYMMETRY**

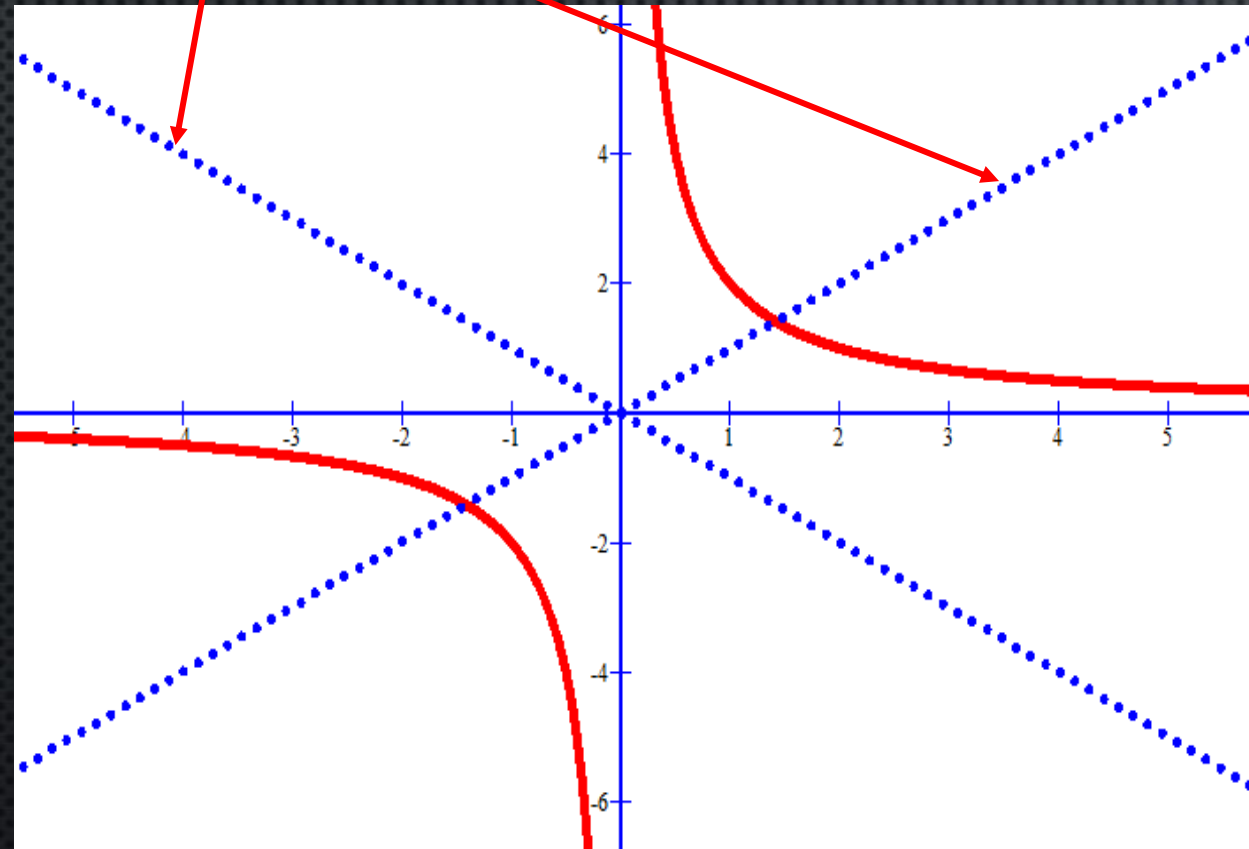
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



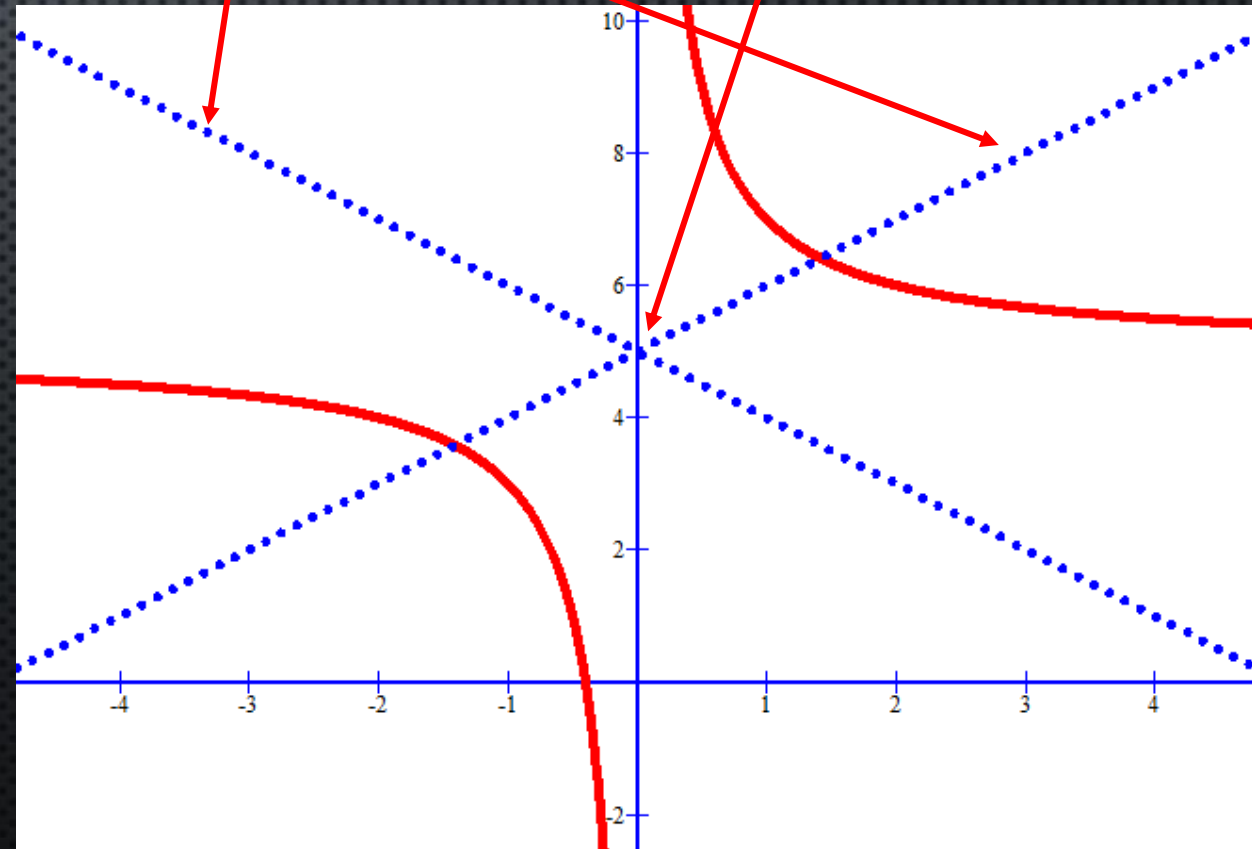
$$y = \frac{2}{x} + 5 \text{ (SHIFTS UP 5 UNITS)}$$

ASYMPTOTE  $x = 0$  AND  $y = 5$

LINES OF SYMMETRY:

1.  $y = x + 5$
2.  $y = -x + 5$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
(0;5)





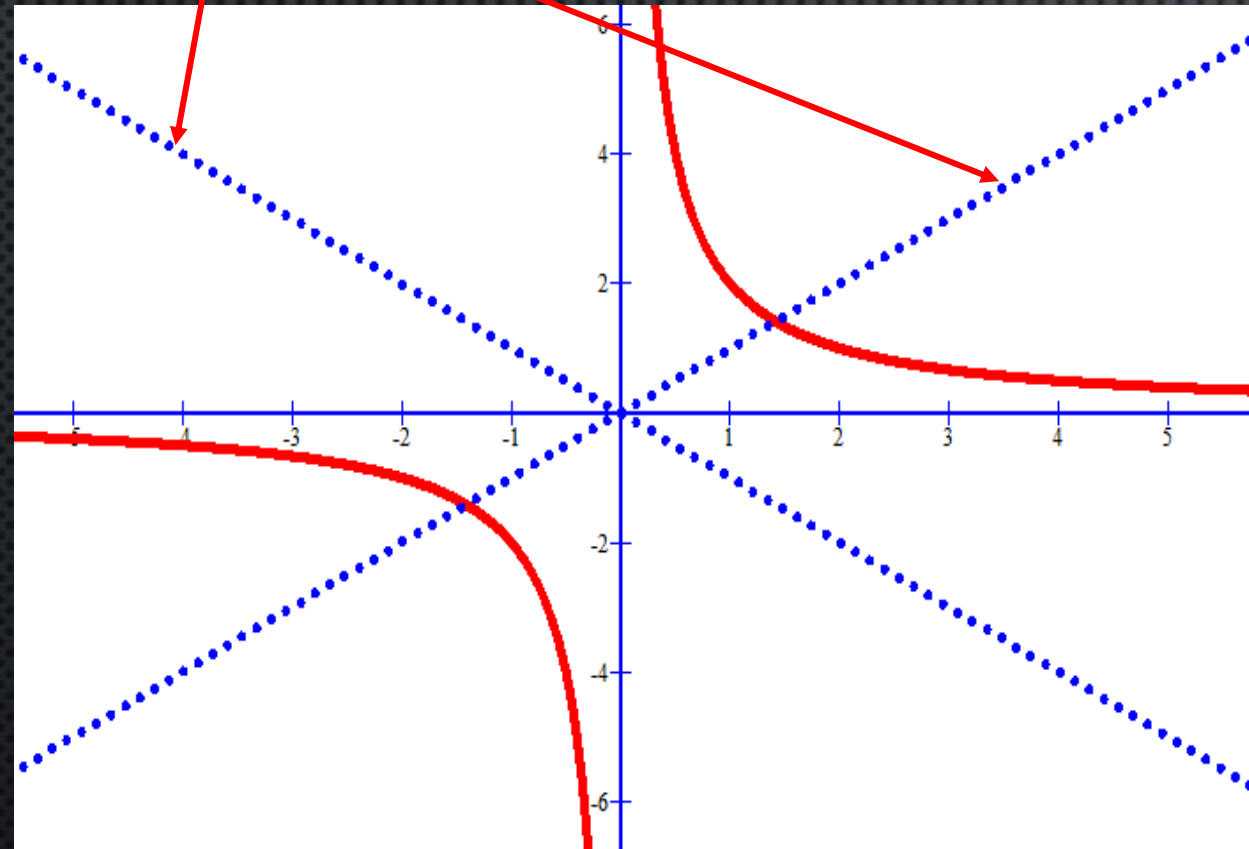
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



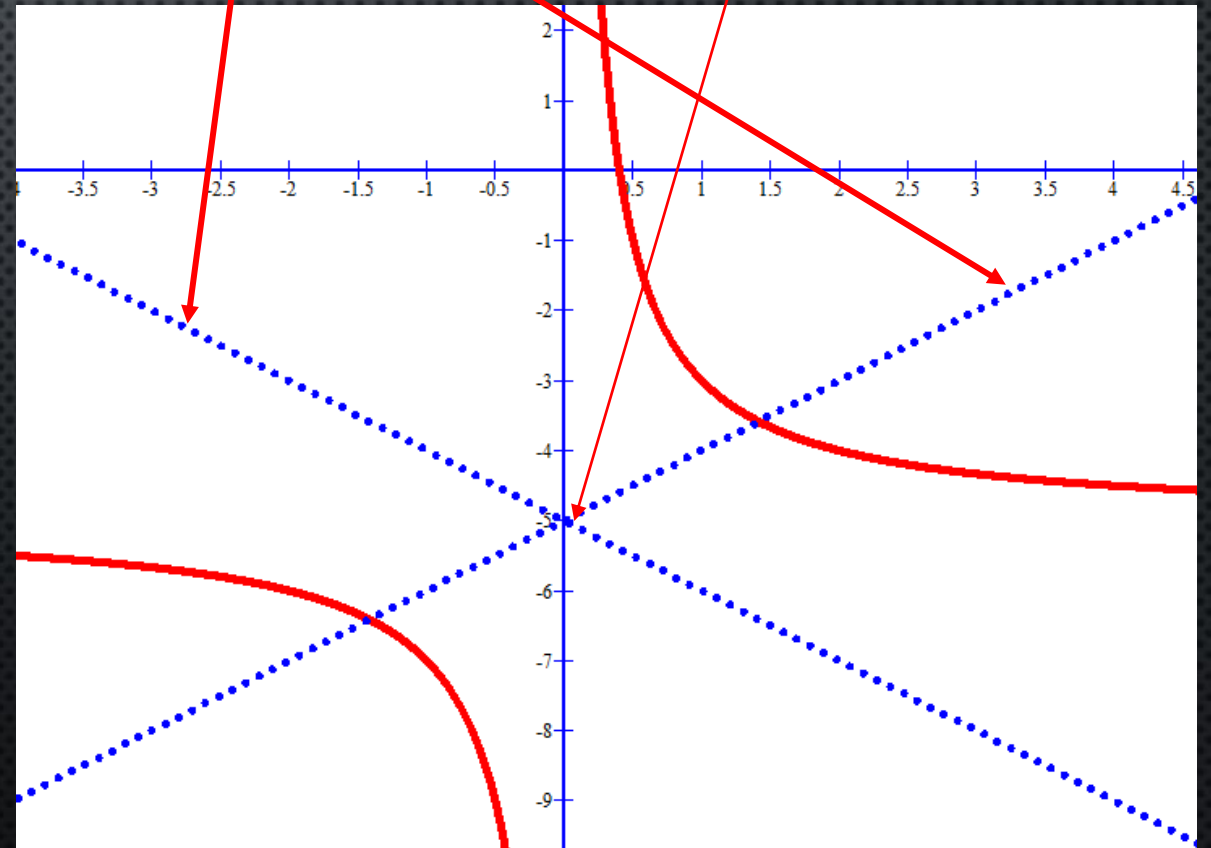
$$y = \frac{2}{x} - 5 \text{ (SHIFTS DOWN 5 UNITS)}$$

ASYMPTOTE  $x = 0$  AND  $y = -5$

LINES OF SYMMETRY:

1.  $y = x - 5$
2.  $y = -x - 5$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
(0; -5)



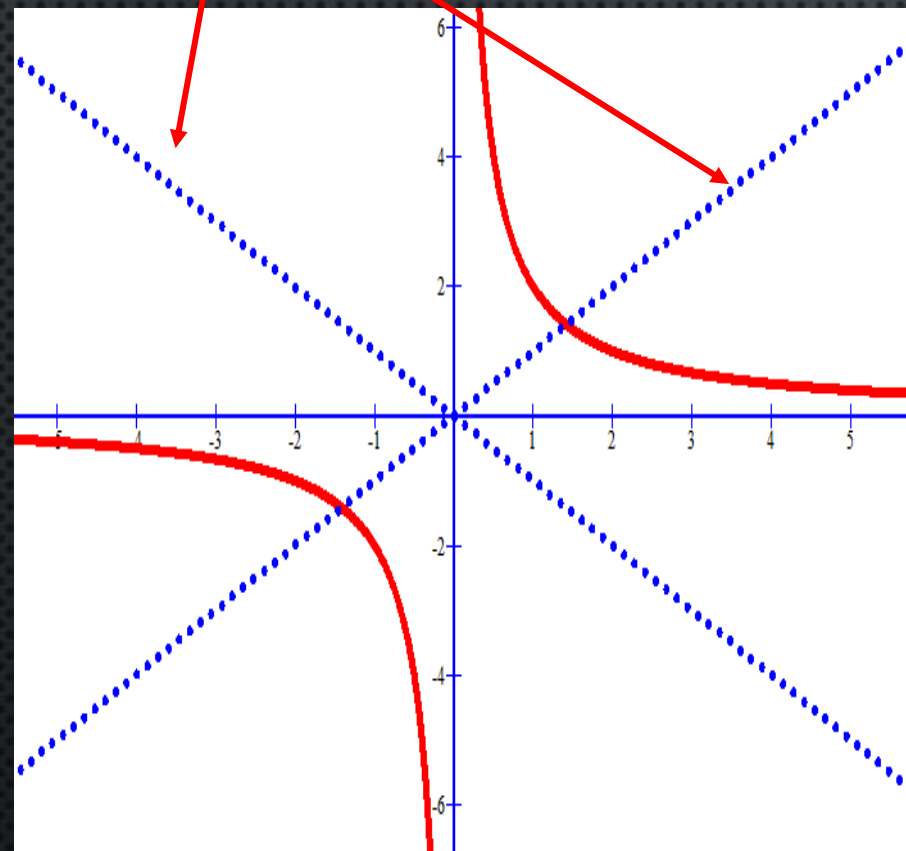
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



$$y = \frac{2}{x+5} \text{ (SHIFTS LEFT 5 UNITS)}$$

ASYMPTOTE  $x = -5$  AND  $y = 0$

LINES OF SYMMETRY:

1.  $y = x + c$

SUB  $x = -5$  AND  $y = 0$  INTO  $y = x + c$  TO GET  $c$

$$0 = (-5) + c$$

$$5 = c$$

$$y = x + 5$$

2.  $y = -x + c$

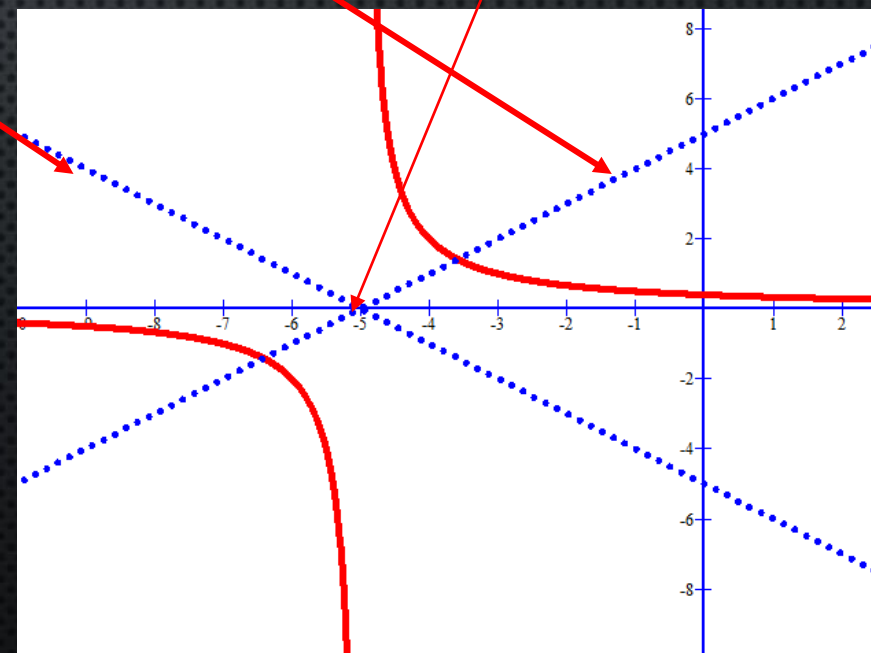
SUB  $x = -5$  AND  $y = 0$  INTO  $y = -x + c$  TO GET  $c$

$$0 = -(-5) + c$$

$$-5 = c$$

$$y = -x - 5$$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
 $(-5; 0)$





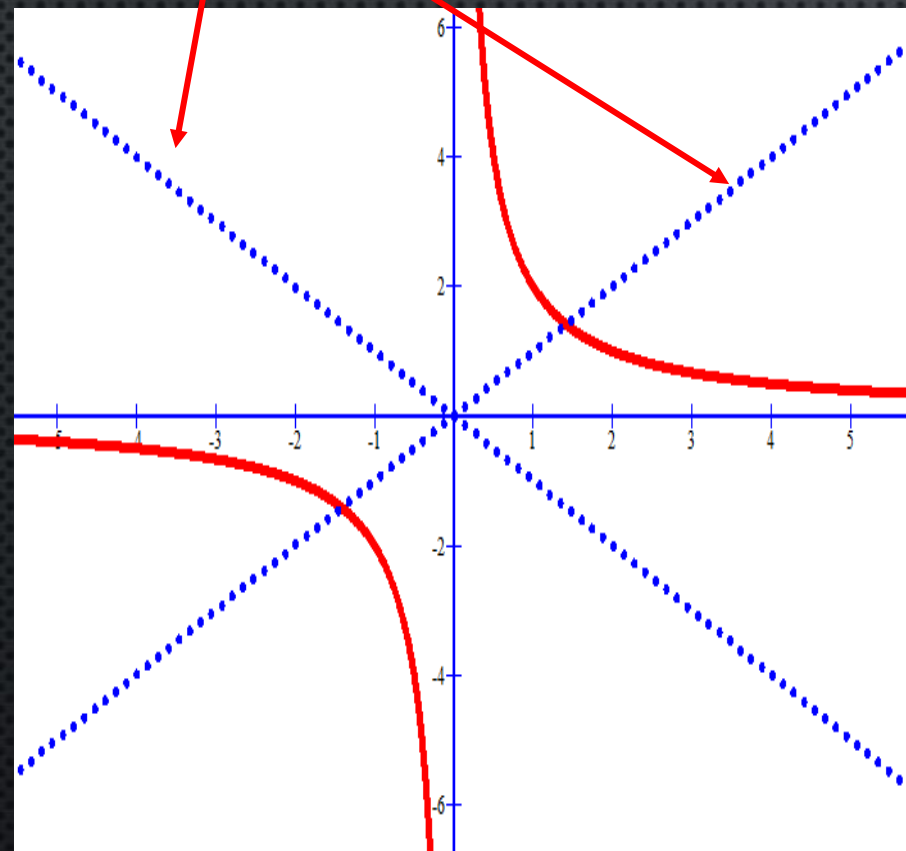
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



$$y = \frac{2}{x-5} \text{ (SHIFTS RIGHT 5 UNITS)}$$

ASYMPTOTE  $x = 5$  AND  $y = 0$

LINES OF SYMMETRY:

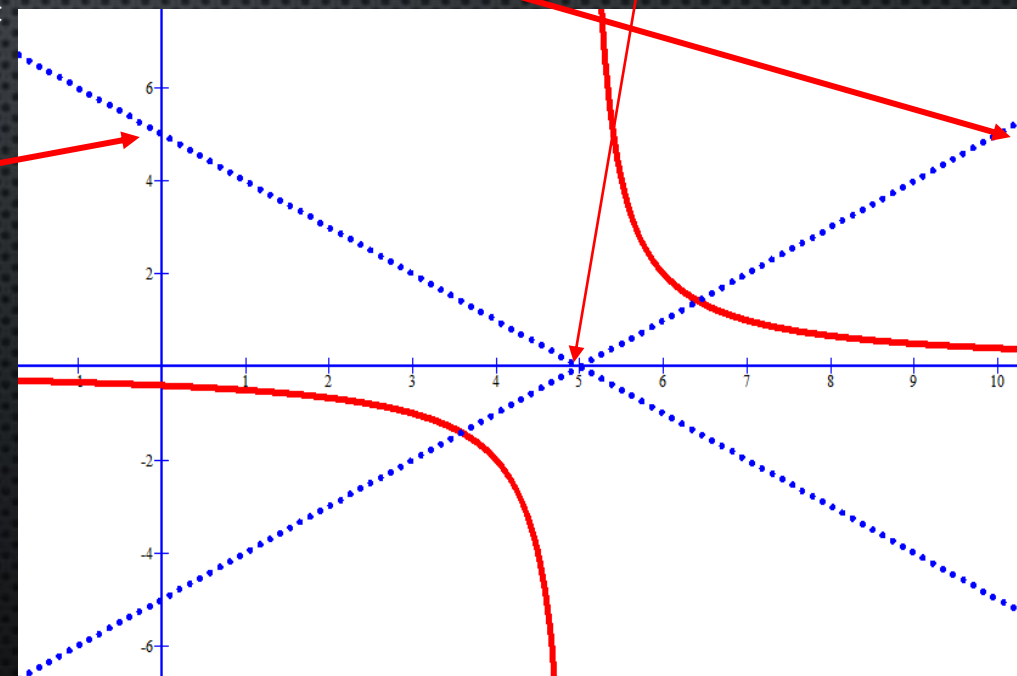
1.  $y = x + c$   
SUB  $x=5$  AND  $y=0$  INTO  $y=x+c$  TO GET  $c$   
 $0 = (5) + c$   
 $-5 = c$

$$y = x - 5$$

2.  $y = -x + c$   
SUB  $x=5$  AND  $y=0$  INTO  $y=-x+c$  TO GET  $c$   
 $0 = -(5) + c$   
 $5 = c$

$$y = -x + 5$$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
 $(5; 0)$



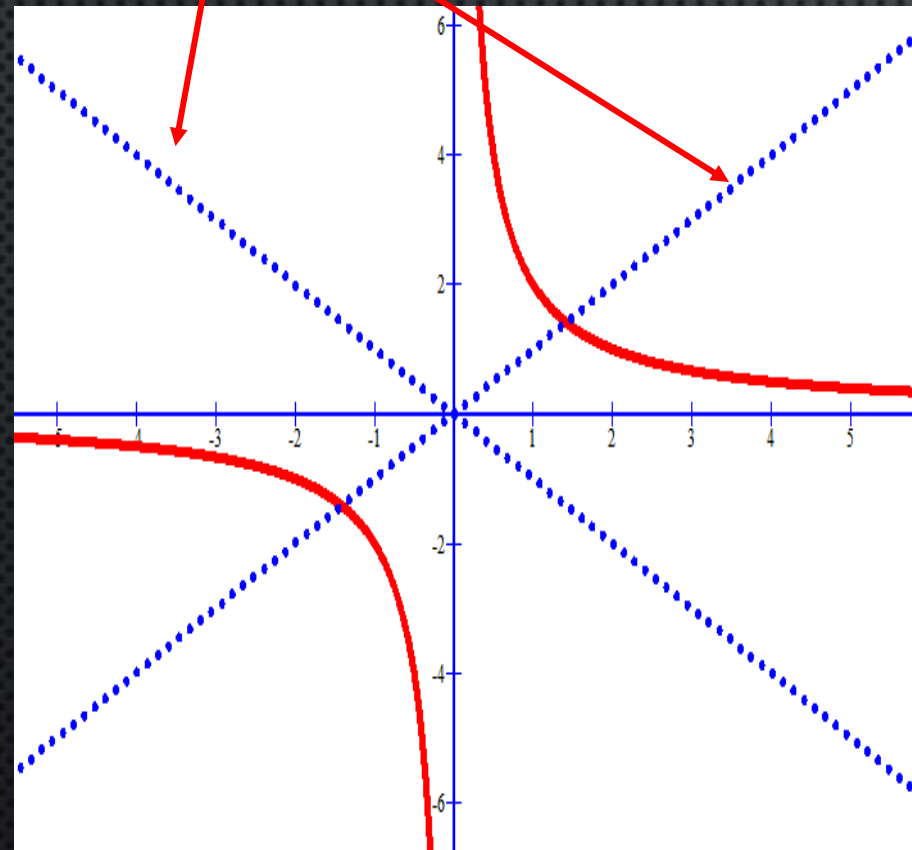
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



$$y = \frac{2}{x+5} + 4 \text{ (SHIFTS UP 4 UNITS AND SHIFTS LEFT 5 UNITS)}$$

ASYMPTOTE  $x = -5$  AND  $y = 4$

LINES OF SYMMETRY:

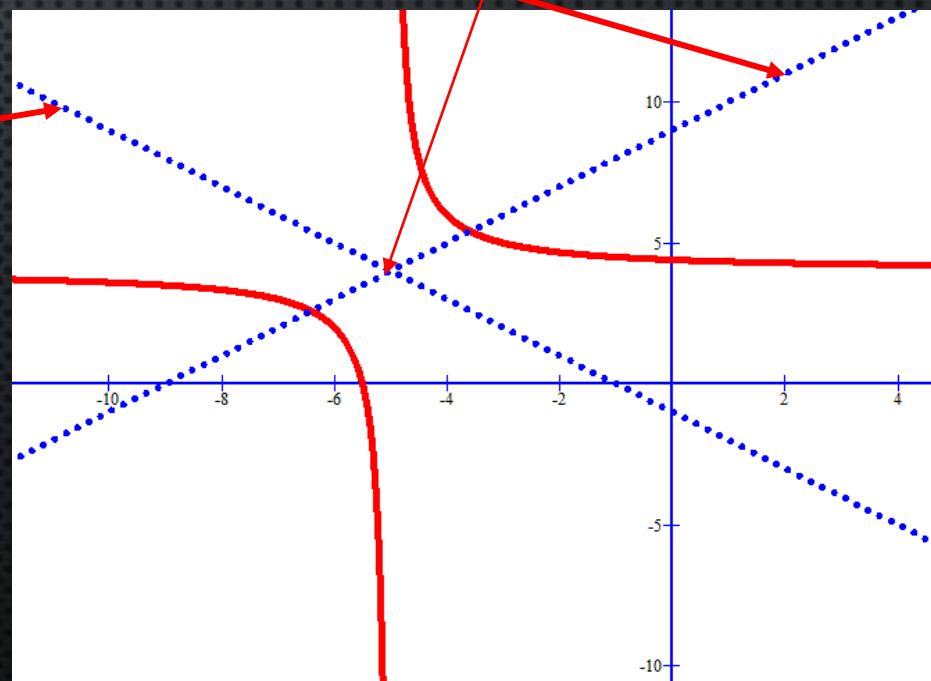
1.  $y = x + c$   
SUB  $x = -5$  AND  $y = 4$  INTO  $y = x + c$  TO GET  $c$   
 $4 = (-5) + c$   
 $9 = c$

$$y = x + 9$$

2.  $y = -x + c$   
SUB  $x = -5$  AND  $y = 4$  INTO  $y = -x + c$  TO GET  $c$   
 $4 = -(-5) + c$   
 $-1 = c$

$$y = -x - 1$$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
 $(-5; 4)$





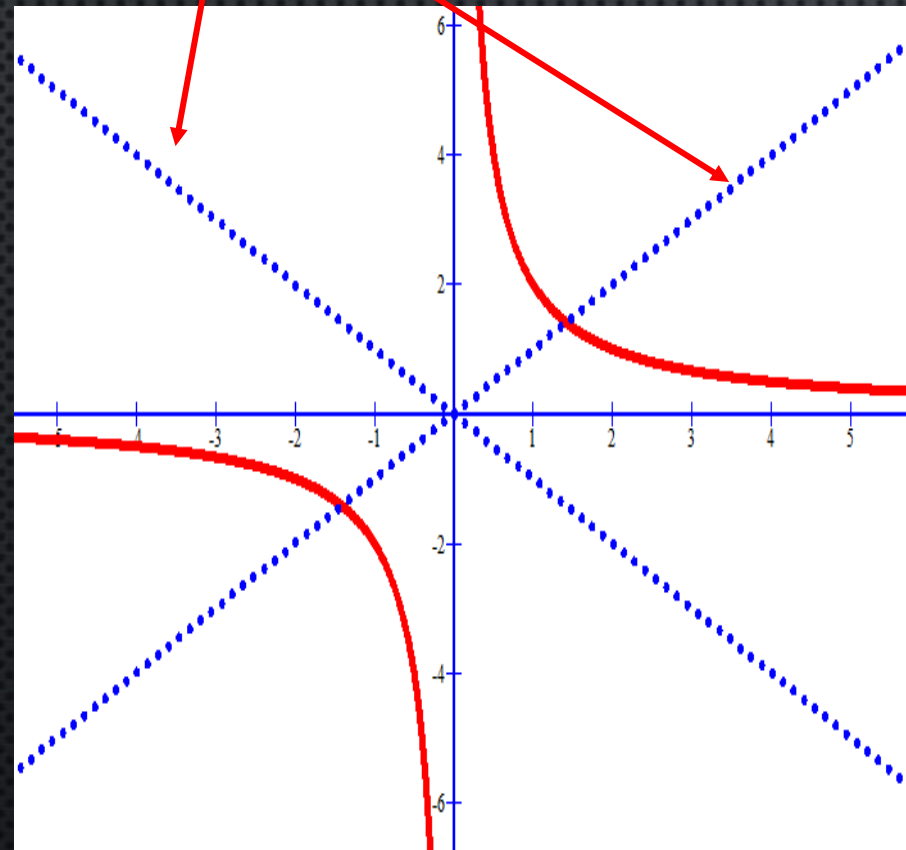
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



$$y = \frac{2}{x-5} + 4 \text{ (SHIFTS UP 4 UNITS AND SHIFTS RIGHT 5 UNITS)}$$

ASYMPTOTE  $x = 5$  AND  $y = 4$

LINES OF SYMMETRY:

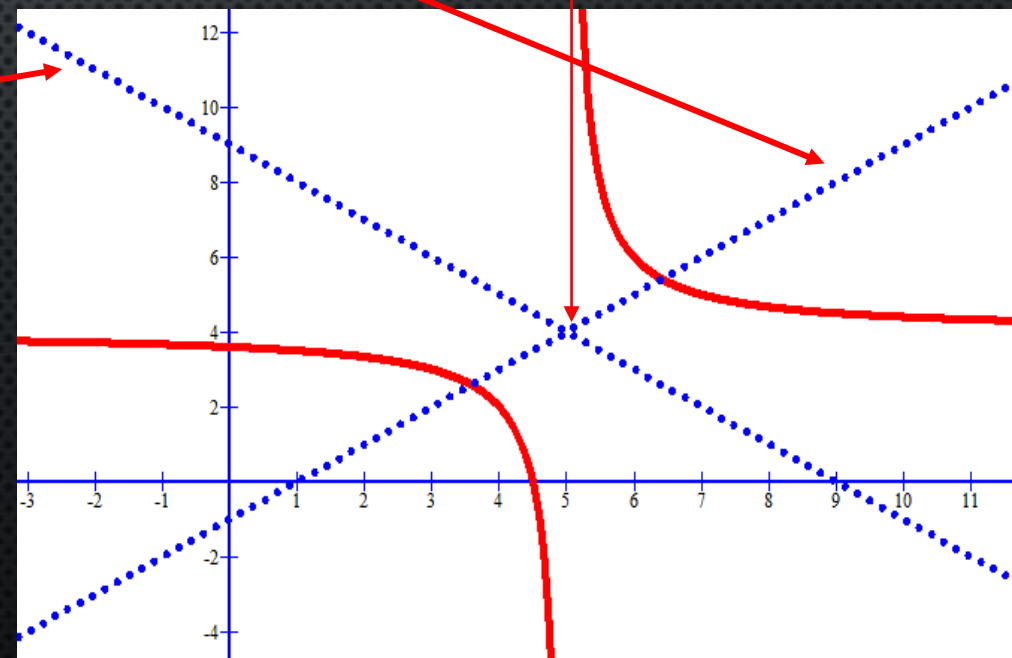
1.  $y = x + c$   
SUB  $x=5$  AND  $y=4$  INTO  $y=x+c$  TO GET  $c$   
 $4 = 5 + c$   
 $-1 = c$

$$y = x - 1$$

2.  $y = -x + c$   
SUB  $x=5$  AND  $y=4$  INTO  $y=-x+c$  TO GET  $c$   
 $4 = -5 + c$   
 $9 = c$

$$y = -x + 9$$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
 $(5;4)$



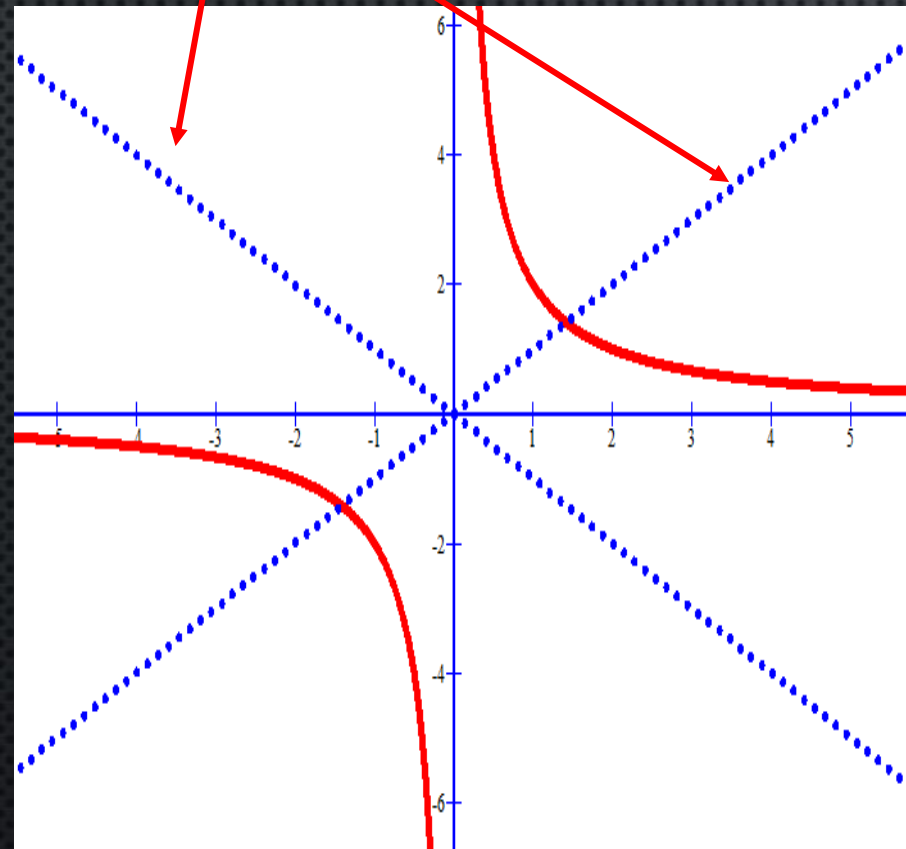
# GRAPHS - HYPERBOLA

$$y = \frac{2}{x}$$

ASYMPTOTE  $x = 0$  (Y-AXIS) AND  $y = 0$  (X-AXIS)

LINES OF SYMMETRY:

1.  $y = x$
2.  $y = -x$



$$y = \frac{2}{x-5} - 4 \text{ (SHIFTS DOWN 4 UNITS AND SHIFTS RIGHT 5 UNITS)}$$

ASYMPTOTE  $x = 5$  AND  $y = -4$

LINES OF SYMMETRY:

1.  $y = x + c$   
SUB  $x=5$  AND  $y=-4$  INTO  $y=x+c$  TO GET  $c$   
 $-4 = (5)+c$   
 $-9 = c$

$$y = x - 9$$

2.  $y = -x + c$   
SUB  $x=5$  AND  $y=-4$  INTO  $y=-x+c$  TO GET  $c$   
 $-4 = -(5)+c$   
 $1 = c$

$$y = -x + 1$$

Coordinates of where the lines of symmetry intersect are the values of the asymptotes:  
 $(5; -4)$

