Inspiring Greatness

ISD

INDEPENDENCE SCHOOL DISTRICT

Math Virtual Learning

College Algebra

May 6, 2020

College Algebra
Lesson: May 6, 2020

Objective/Learning Target: Students will able to identify and graph the conic hyperbola.

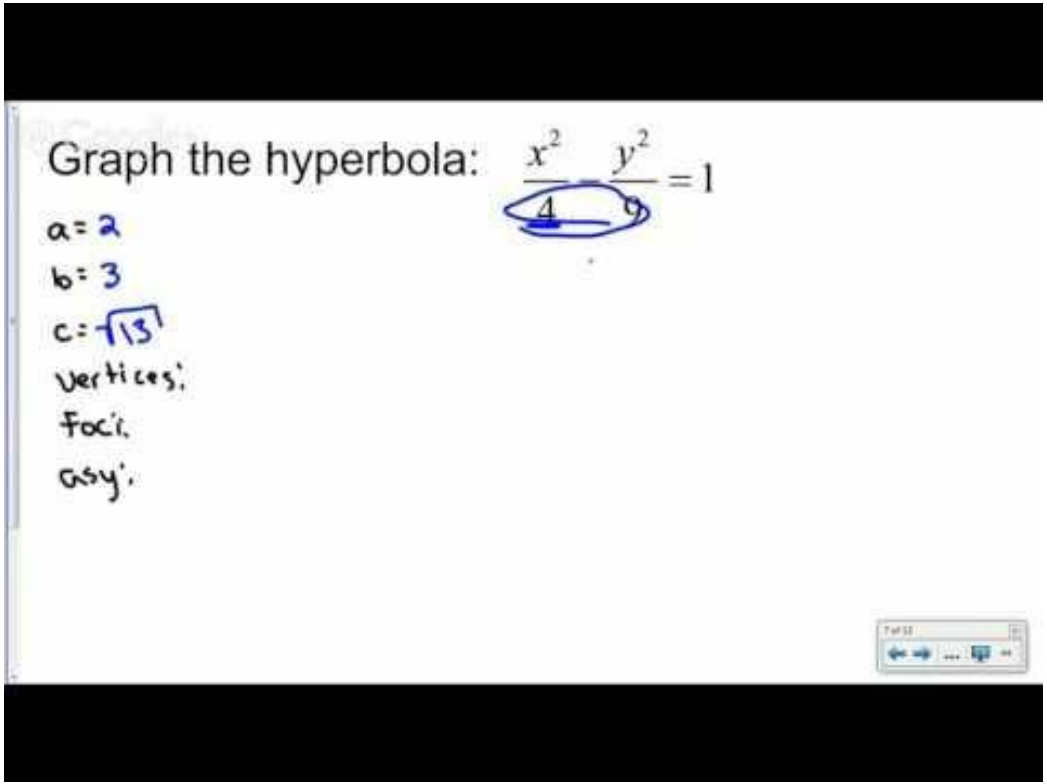
Warm Up Activity:

Click the link below and practice some Completing the square problems

Completing the Square

Lesson:

Watch the video over hyperbolas. Stop at 12:31 or continue for more examples. We encourage you to have your own sheet of paper out and work along with the video.



Practice:

Work through the practice problems at the links

Practice Problems

Hyperbola Properties

Additional Practice:

1) Find the vertices and asymptotes of the hyperbola.

$9y^2 - 16x^2 = 144$

A) vertices: $(0, \pm 4)$ asymptote: $y = \pm \frac{4}{3}x$

B) vertices: $(0, \pm 4)$ asymptote: $y = \pm \frac{3}{4}x$

C) vertices: $(\pm 4, 0)$ asymptote: $y = \pm \frac{4}{3}x$

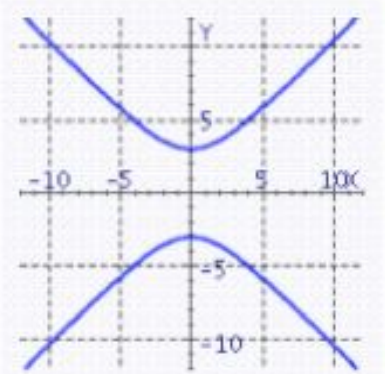
D) vertices: $(\pm 4, 0)$ asymptote: $y = \pm \frac{3}{4}x$

Additional Practice:

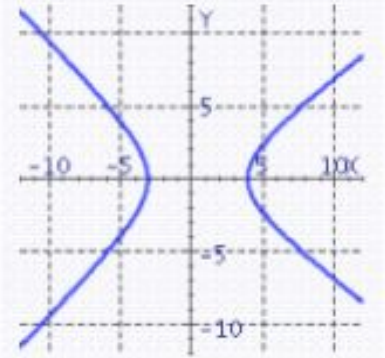
2) Graph the hyperbola.

$$9x^2 - 9y^2 = 81$$

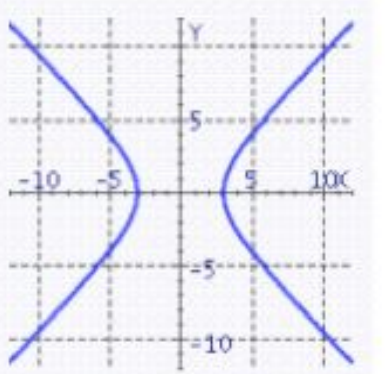
A)



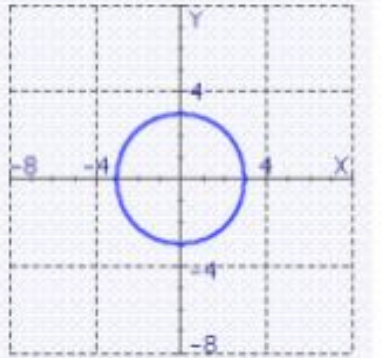
B)



C)



D)



Additional Practice:

3) Find the standard form of the equation of the hyperbola with the given characteristics.

vertices: $(-2, -4), (-2, 6)$ foci: $(-2, -5), (-2, 7)$

A) $\dfrac{(y-1)^2}{25} - \dfrac{(x+2)^2}{11} = 1$

B) $\dfrac{(y+1)^2}{25} - \dfrac{(x-2)^2}{11} = 1$

C) $\dfrac{(y-2)^2}{11} - \dfrac{(x+1)^2}{25} = 1$

D) $\dfrac{(y-1)^2}{25} - \dfrac{(x+2)^2}{36} = 1$

Additional Practice Answers:

1) A

2) C

3) A