Bellwork Alg 2B Monday, December 4, 2017

1. Find the coordinates of the Center, Vertices, Foci, and slopes of the Asymptotes.

$$\frac{(x-7)^2}{256} - \frac{(y+3)^2}{81} = 1$$

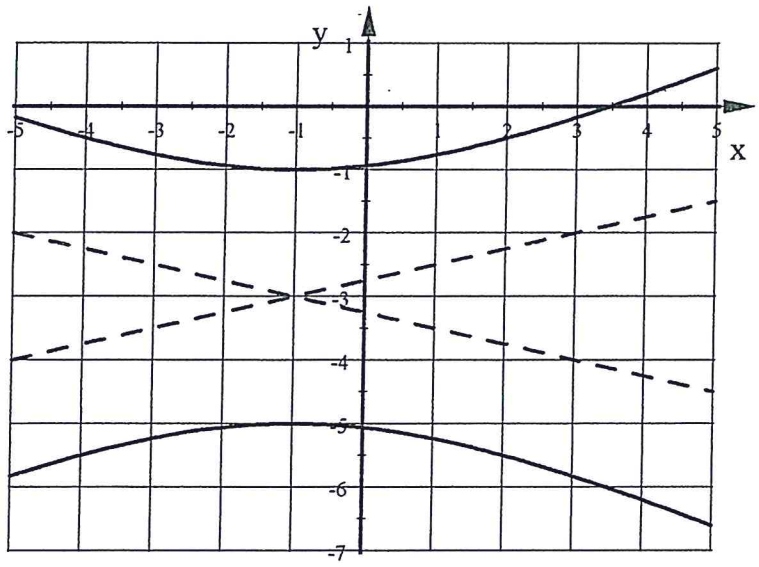
Center: Vertices: Foci: Asymptotes: $m =$

2. Find the coordinates of the Center, Foci, Vertices, and Co-Vertices.

$$\frac{(x+11)^2}{64} + \frac{(y-9)^2}{289} = 1$$

Center: Foci: Vertices: Co-Vertices:

3. Write the equation of this Hyperbola:



4. A solid cube of side 6 is first painted pink and then cut into smaller cubes of side 2. How many of the smaller cubes have paint on exactly 2 sides?

A. 30 B. 24 C. 12 D. 8 E. 6

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Answers

1. Find the coordinates of the Center, Vertices, Foci, and slopes of the Asymptotes.

$$\frac{(x-7)^2}{256} - \frac{(y+3)^3}{81} = 1$$

Center: $(7,-3)$

Vertices: $(-9,-3)$ $(23,-3)$

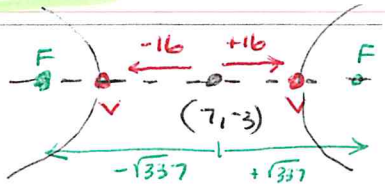
Foci: $(7 \pm \sqrt{337}, -3)$

Asymptotes: $m = \pm \frac{9}{16}$

$a^2 = 256 \quad a = 16$

$b^2 = 81 \quad b = 9$

$c^2 = a^2 + b^2 = 337 \quad c = \sqrt{337}$



2. Find the coordinates of the Center, Foci, Vertices, and Co-Vertices.

$$\frac{(x+11)^2}{64} + \frac{(y-9)^3}{289} = 1$$

Center: $(-11,9)$

Foci: $(-11,24)$ $(-11,-6)$

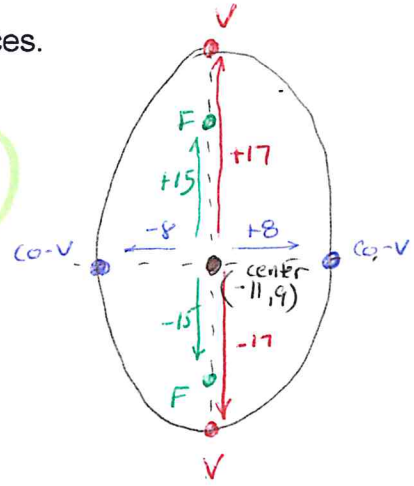
Vertices: $(-11,26)$ $(-11,-8)$

Co-Vertices: $(-19,9)$ $(-3,9)$

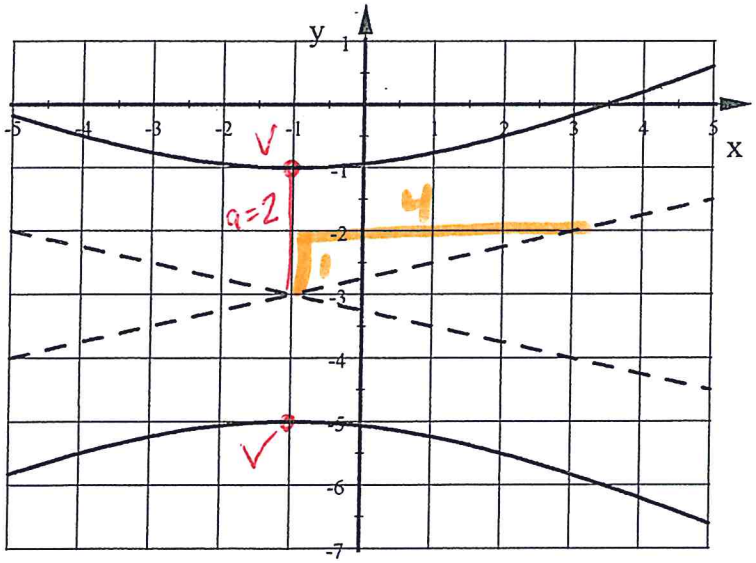
$a^2 = 289 \quad a = 17$

$b^2 = 64 \quad b = 8$

$c^2 = 289 - 64 = 225 \quad c = 15$



3. Write the equation of this Hyperbola:



center $(-1,-3)$

slope of sides $= \pm \frac{1}{4}$

but if $a = 2$

$m = \frac{1}{4} \cdot \frac{2}{2} = \frac{2}{8} = \frac{a}{b}$

$a = 2 \quad a^2 = 4$

$b = 8 \quad b^2 = 64$

$$\frac{(Y+3)^2}{4} - \frac{(X+1)^2}{64} = 1$$

4. A solid cube of side 6 is first painted pink and then cut into smaller cubes of side 2. How many of the smaller cubes have paint on exactly 2 sides?

A. 30 B. 24 C. 12 D. 8 E. 6