Algebra 2
Unit: Conic Sections
Section: Hyperbolas

Review Worksheet Key

1) Name the center, vertices, co-vertices, foci and slope of the asymptotes of the following hyperbolas. Then graph the hyperbola.

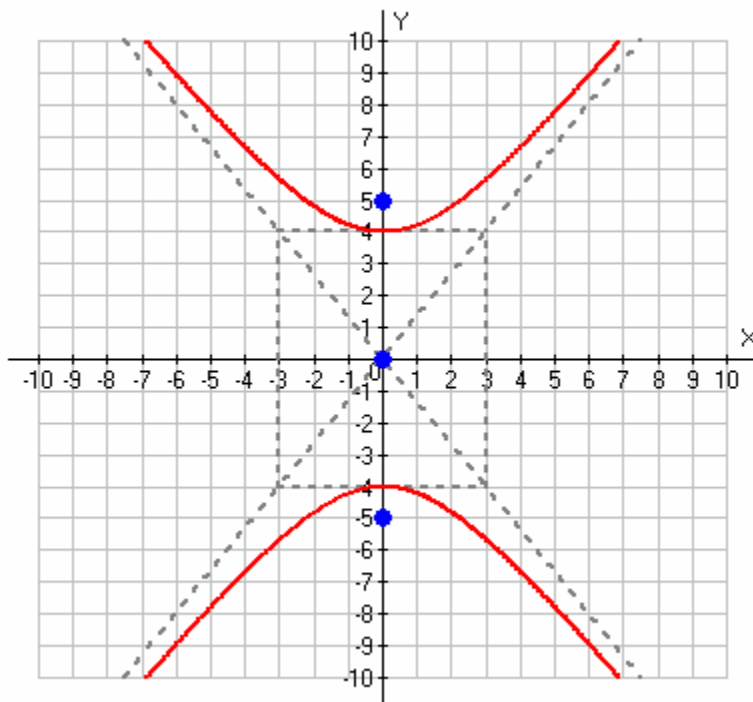a. $\dfrac{y^2}{16} - \dfrac{x^2}{9} = 1$

Center: (0, 0)

Vertices: (0, 4) and (0, -4)

Co-vertices: (3, 0) and (-3, 0)

Foci: (0, 5) and (0, -5)

Slope of tangent lines: $\pm\dfrac{4}{3}$

Graph:

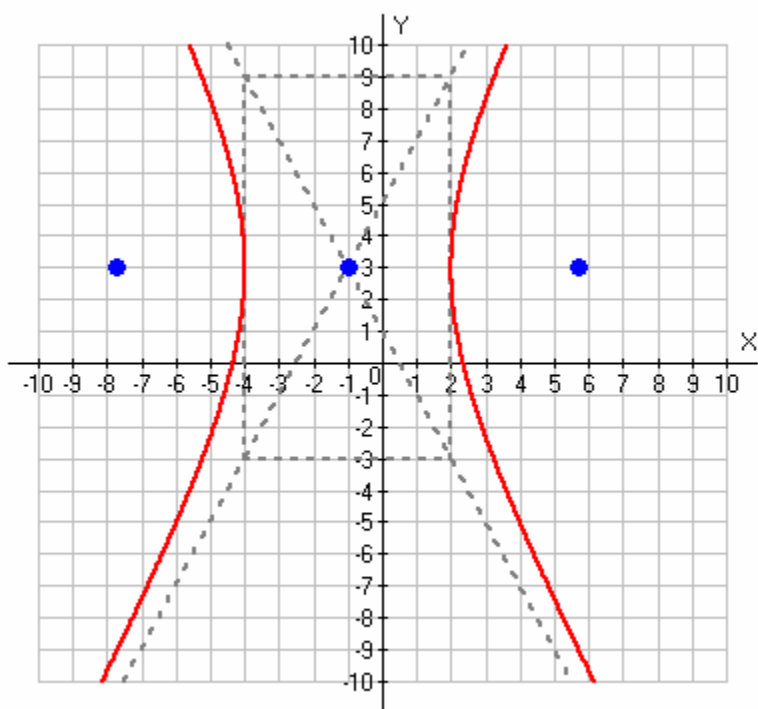b. $\dfrac{(x+1)^2}{9} - \dfrac{(y-3)^2}{36} = 1$

Center: (-1, 3)

Vertices: (-4, 3) and (2, 3)

Co-vertices: (-1, -3) and (-1, 9)

Foci: (-1 − $3\sqrt{5}$, 3) and (-1 + $3\sqrt{5}$, 3)

Slope of tangent lines: ±2

Graph:

c. $\dfrac{(y+2)^2}{16} - \dfrac{(x-2)^2}{16} = 1$

Center: (2, -2)

Vertices: (2, -6) and (2, 2)

Co-vertices: (-2, -2) and (6, -2)

Foci: $(2, -2 - 4\sqrt{2})$ and $(2, -2 + 4\sqrt{2})$

Slope of tangent lines: ± 1

Graph: