12-2 Writing Equations of a Hyperbola

Parametric Equations of Hyperbola

Opens in x-direction (left and right)	Opens in y-direction (up and down)
x = secT y = tanT	x = tanT y = secT

**opens in direction where secT is

Write parametric equations. (same pictures from yesterday's notes to check)

1. $\left(\frac{x-1}{4}\right)^2 - \left(\frac{y+3}{2}\right)^2 = 1$

2. $-\left(\frac{x+5}{2}\right)^2 + \left(\frac{y-4}{3}\right)^2 = 1$

Write a Cartesian equation of the hyperbola that satisfies each set of conditions.

3. vertices (-2, 1) and (6, 1) and foci (-4, 1) and (8, 1)

4. vertices (-4, 6) and (-4, -2) and foci (-4, 10) and (-4, -6)

5. vertices (4, 3) and (4, -5), conjugate axis length of 4