5. (cont.)

$$9x'^2 - 7y'^2 = 3$$

$$\frac{9x'^2}{3} - \frac{7y'^2}{3} = 1$$

$$\frac{3x'^2}{1} - \frac{7y'^2}{3} = 1$$

$$\frac{x'^2}{\frac{1}{3}} - \frac{y'^2}{\frac{3}{7}} = 1$$

$$\frac{(x'-0)^2}{\left(\sqrt{\frac{1}{3}}\right)^2} - \frac{(y'-0)^2}{\left(\sqrt{\frac{3}{7}}\right)^2} = 1$$

$$\frac{(x'-0)^2}{\left(\frac{\sqrt{1}}{\sqrt{3}}\right)^2} - \frac{(y'-0)^2}{\left(\frac{\sqrt{3}}{\sqrt{7}}\right)^2} = 1$$

$h=0$ $\quad$ $k=0$

$$\frac{(x'-0)^2}{\left(\frac{\sqrt{3}}{3}\right)^2} - \frac{(y'-0)^2}{\left(\frac{\sqrt{21}}{7}\right)^2} = 1$$

LEFT

$a = \frac{\sqrt{3}}{3}$ $\qquad$ $b = \frac{\sqrt{21}}{7}$

$$b^2 = c^2 - a^2$$

$$\left(\frac{\sqrt{21}}{7}\right)^2 = c^2 - \left(\frac{\sqrt{3}}{3}\right)^2$$

$$\frac{21}{49} = c^2 - \frac{3}{9}$$

$$\frac{21}{49} + \frac{3}{9} = c^2$$

$$\frac{3}{7} + \frac{1}{3} = c^2$$

$$\frac{9}{21} + \frac{7}{21} = c^2$$

$$\frac{16}{21} = c^2$$

$$c = \sqrt{\frac{16}{21}}$$

$$c = \frac{\sqrt{16}}{\sqrt{21}}$$

$$c = \frac{4}{\sqrt{21}}$$

$$c = \frac{4\sqrt{21}}{21}$$