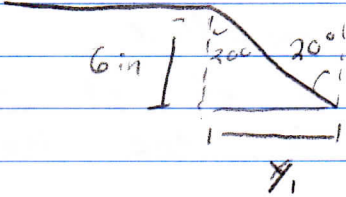
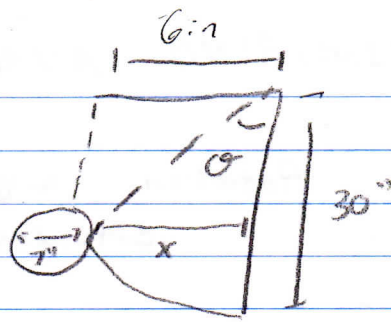


$$w = \frac{22''}{\pi} = 7''$$



$$y_1 = 6 \tan(20^\circ)$$

$$y_1 = 2.184 \text{ in}$$

$$x = (6'' + 2.184'') - 3.5'' \Rightarrow x = 4.684''$$

$$\theta = \sin^{-1}\left(\frac{x}{30}\right) = \sin^{-1}\left(\frac{4.684''}{30''}\right) = 8.98^\circ \approx 9^\circ$$

RANGE OF MOTION OF ROUGHLY
 $18^\circ \pm 1.35^\circ$

Assumptions

- This assumes a 22" waist as cited from children's place.com. Assuming a circular shape is not exact and only an approximation