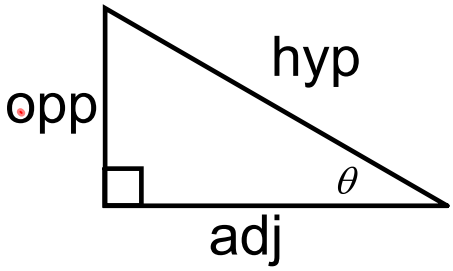
Chapter 7.5: Apply the Tangent Ratio

A Trigonometric ratio is a ratio of the lengths of two sides in a right triangle. (Sine, Cosine, Tangent)

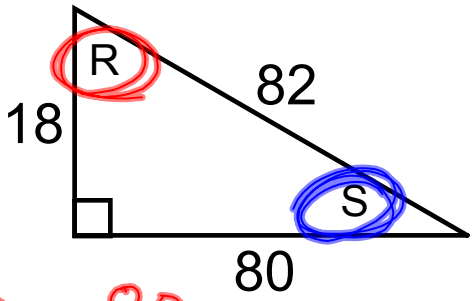
Used to find side lengths and angle measurements

Theta an angle

$$\tan\theta = \frac{opposite}{adjacent}$$



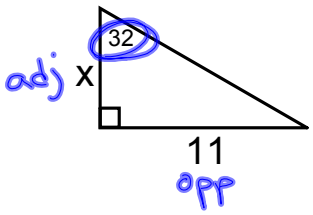
Find tan R and tan S. Write as a fraction and decimal to four places.



$\tan R = \frac{80}{18} = \frac{40}{9} \approx 4.4444$

$\tan S = \frac{18}{80} = \frac{9}{40} = .225$

Find the value of x.



$\tan(32) = \frac{11}{x}$

$\frac{\tan(32)}{1} \times \frac{11}{x}$

$\frac{11}{\tan(32)} = \frac{x\tan(32)}{\tan(32)}$

$x = \frac{11}{\tan(32)}$

$x = 17.6037$

Find the height of the lamppost to the nearest inch.

$40\tan(70) = \frac{h}{40}(40)$

$40 \cdot \tan(70) = h$

109.8991

110 inches

4.

$(13)\tan(56) = \frac{x}{13}(13)$

$19.2733 = x$

Homework: Chapter 7.5
#'s 4-8e,14-28e,32