

12.3 Law of Sines

Purpose:

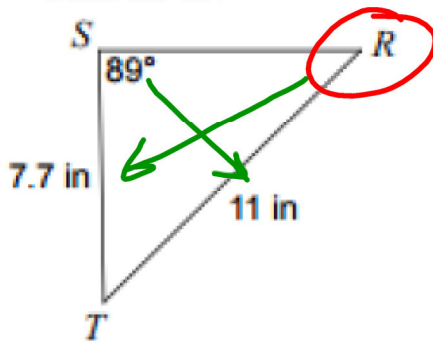
To find the missing sides and angles of non-right triangles.

Learning Target:

I can use the Law of Sines to find missing sides and angles of triangles.

Use the Law of Sines to find the missing angle below.

4. Find $m\angle R$.



Test on Friday

$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

~~$$\frac{\sin R}{7.7} = \frac{\sin 89}{11}$$~~

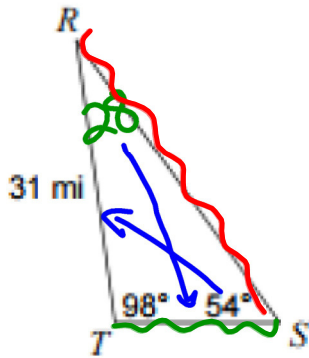
$$\frac{11 \cdot \sin R}{11} = \frac{7.7 \sin 89}{11}$$

$$R = \sin^{-1}\left(\frac{7.7 \sin 89}{11}\right)$$

$$R = 44.4^\circ$$

Find all the missing sides and angles in the triangle below.

5.



$$\frac{\sin 54}{31} = \frac{\sin 28}{TS}$$

$$TS \cdot \sin 54 = 31 \cdot \sin 28$$

$$\frac{TS \cdot \sin 54}{\sin 54} = \frac{31 \cdot \sin 28}{\sin 54}$$

$m\angle R = 28^\circ$
 $TS = 18$
 $RS = 37.9$

$$\frac{\sin 54}{31} = \frac{\sin 98}{RS}$$

$$\frac{RS \cdot \sin 54}{\sin 54} = \frac{31 \cdot \sin 98}{\sin 54}$$

$$RS = 37.9$$

