Section 8-6
Law of Sines

28.) About 536 ft. of fencing material is required.

Solve each $\triangle KLM$.

18.) $m\angle M = 61$
$m\angle K = 31$
$m = 5.4$
Find l.

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

$$\frac{\sin K}{k} = \frac{\sin L}{l} = \frac{\sin M}{m}$$

$180 = m\angle M + m\angle K + m\angle L$
$180 = 61 + 31 + m\angle L$
$180 = 92 + m\angle L$
$88 = m\angle L$

$$\frac{\sin 31^\circ}{k} = \frac{\sin 81^\circ}{l} = \frac{\sin 61^\circ}{5.4}$$

$$\frac{\sin 81^\circ}{l} = \frac{\sin 61^\circ}{5.4}$$

$$5.4 \sin 81^\circ = l \sin 61^\circ$$

$$\frac{5.4 \sin 81^\circ}{\sin 61^\circ} = l$$

$$6.1 = l$$

16.) $m\angle M = 59$
$l = 8.3$
$m = 14.8$
Find $m\angle L$.

$\triangle KLM$

$$\frac{\sin M}{m} = \frac{\sin L}{l} = \frac{\sin K}{k}$$

$$\frac{\sin 59^\circ}{14.8} = \frac{\sin L}{8.3}$$

$$8.3 \sin 59^\circ = 14.8 \sin L$$

$$\frac{8.3 \sin 59^\circ}{14.8} = \sin L$$

$$= \sin^{-1}(\sin L)$$

$$\sin^{-1}\left(\frac{8.3 \sin 59^\circ}{14.8}\right) = L$$

$$m\angle L = 29^\circ$$