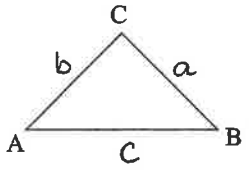
Law of Sines – Lesson 7-6

- For any triangle:



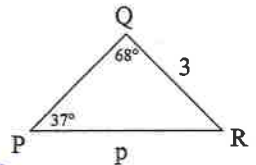
a is opposite ∠A

b is opposite ∠B

c is opposite ∠C

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

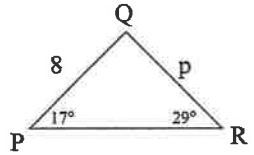
Find p to the nearest tenth



$\frac{\sin 37}{3} = \frac{\sin 68}{p}$

$\frac{3 \cdot \sin 68}{\sin 37} = p$

$p = 4.6$



$\frac{\sin 17}{p} = \frac{\sin 29}{8}$

$\frac{8 \sin 17}{\sin 29} = p$

$p = 4.8$

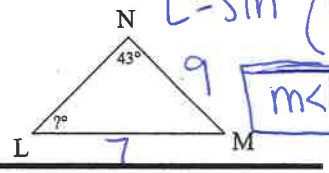
Find m∠L to the nearest degree if n = 7, ℓ = 9 and m∠N = 43°

$\frac{\sin L}{9} = \frac{\sin 43}{7}$

$\frac{9 \sin 43}{7} = \sin L$

$L = \sin^{-1}\left(\frac{9 \sin 43}{7}\right)$

$m\angle L = 61°$



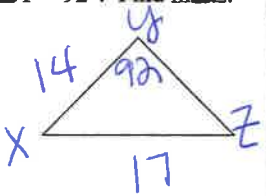
In ▲XYZ, y = 17, z = 14, and m∠Y = 92°. Find m∠Z.

$\frac{\sin 92}{17} = \frac{\sin z}{14}$

$\sin z = 14\left(\frac{\sin 92}{17}\right)$

$z = \sin^{-1}\left(\frac{\sin 92}{17}\right)14$

$m\angle Z = 55°$



Find all missing parts of ▲DEF if m∠D = 112°, m∠F = 8°, and f = 2.

$\frac{\sin 8}{2} = \frac{\sin 112}{d}$

$\frac{2 \cdot \sin 112}{\sin 8} = d = 13.3$

$\frac{\sin 8}{2} = \frac{\sin 60}{e}$ (f = 2)

$e = 12.4$

Find all missing parts of ▲JKL if m∠J = 32°, l = 30 and j = 16.

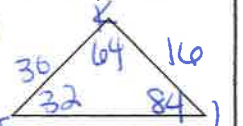
$\frac{\sin 32}{16} = \frac{\sin L}{30}$

$\frac{30 \cdot \sin 32}{16} = \sin L$

$m\angle L = \sin^{-1}\left(\frac{30 \cdot \sin 32}{16}\right)$

$m\angle L = 84°$

$m\angle K = 64$



$\frac{\sin 64}{k} = \frac{\sin 32}{16}$

$k = 27.1$