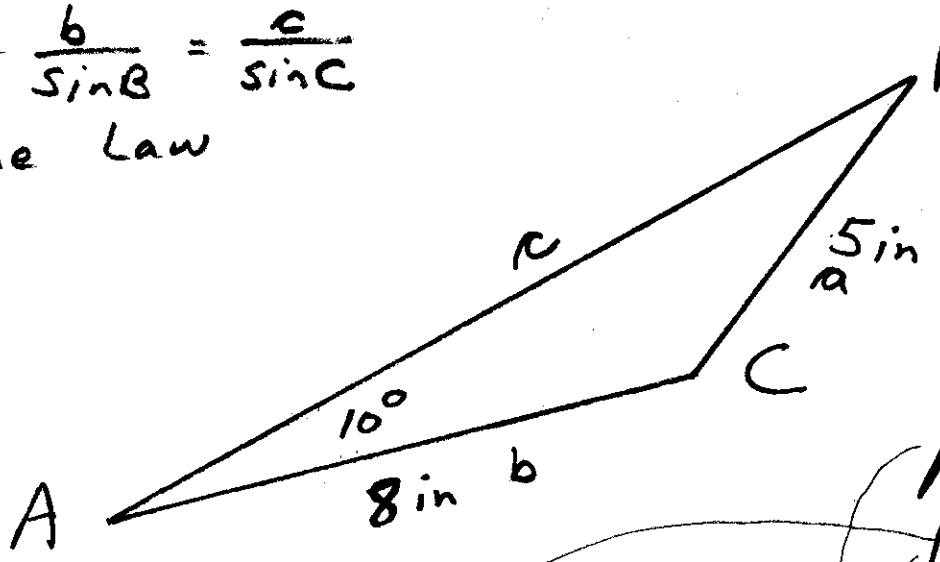
20070321111

Name Key

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

Sine Law



Answers

$A = 10^\circ$

$B = 16.127^\circ$

$C = 153.873$

$a = 5$

$b = 8$

$c = 12.68$

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

$$\frac{5}{\sin 10^\circ} = \frac{8}{\sin B}$$

$$\frac{5}{.1736} = \frac{8}{\sin B}$$

$$5 \sin B = (8)(.1736)$$

$$\sin B = \frac{(8)(.1736)}{(5)}$$

$$\sin B = (1.6)(.1736)$$

$$\sin B = 0.27776$$

$$B = \sin^{-1}(.27776)$$

$$B = 16.127^\circ$$

$$A + B + C = 180$$

$$(10^\circ) + (16.127^\circ) + C = 180^\circ$$

$$26.127^\circ + C = 180^\circ$$

$$C = 180^\circ - 26.127^\circ$$

$$C = 153.873^\circ$$

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

$$\frac{5}{\sin 10^\circ} = \frac{c}{\sin 153.873^\circ}$$

$$\frac{5}{.1736} = \frac{c}{.44036}$$

$$c = \frac{(5)(.44036)}{(.1736)}$$

$$c = 12.683$$