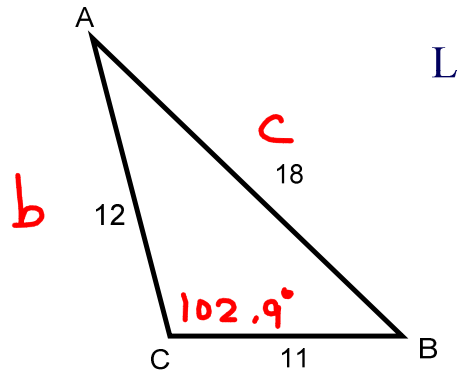
Law of Cosines - Missing Angle



Law of Cosines: $c^2 = a^2 + b^2 - 2ab\cos C$

Always find the biggest angle first!

$18^2 = 11^2 + 12^2 - 2(11)(12)\cos C$

$324 = 121 + 144 - 264\cos C$

$324 = 265 - 264\cos C$

$59 = -264\cos C$

$\frac{59}{-264} = \cos C$

$C = 102.9°$

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

$\frac{\sin 102.9}{18} = \frac{\sin B}{12}$

$\frac{18\sin B}{18} = \frac{12\sin 102.9}{18}$

$\sin B = \frac{12\sin 102.9}{18}$

$B = 40.5$

$A = 180 - (102.9 + 40.5)$

$A = 180 - 143.4$

$A = 36.6°$