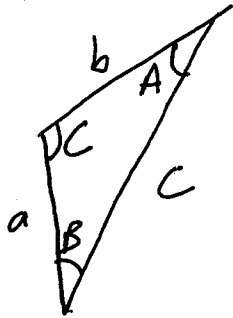


Triangle Laws

Rob Bayer, Math 1A, Fall 2008

When doing related rates, some triangle laws can be helpful. Here's a few you should definitely know:

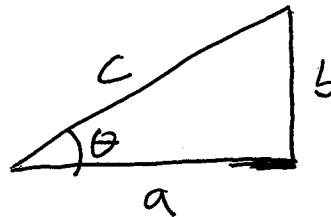
For any triangle



Law of sines: $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

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

For right triangle



Pythagorean theorem: $a^2 + b^2 = c^2$

SohCahToa: $\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{b}{c}$
 $\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{a}{c}$
 $\tan \theta = \frac{\text{opp}}{\text{adj}} = \frac{b}{a}$