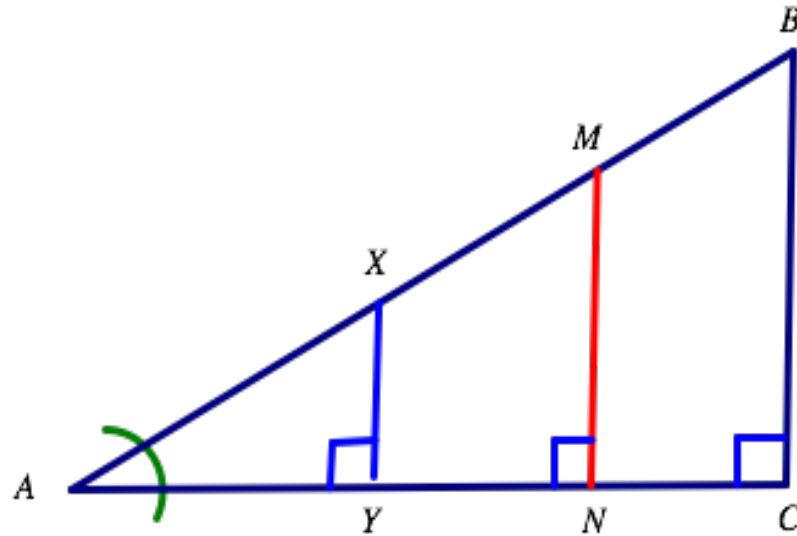
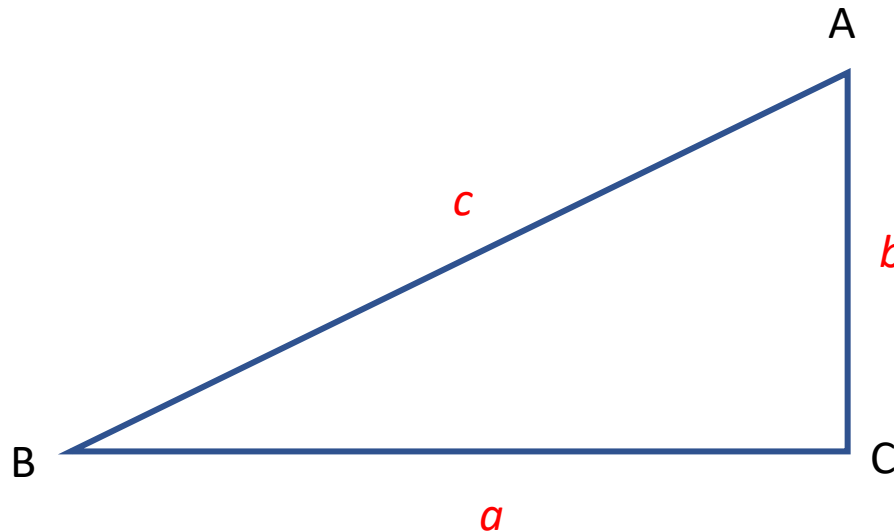


Looking for Patterns – the Cosine



If we were to look at other ratios based on the above triangles, we would also realize because of similar triangles, these ratios are also equal; $\frac{AC}{AB} = \frac{AN}{AM} = \frac{AY}{AX}$

Naming all the ratios, then giving them a name based on angle location



$$\frac{a}{b}, \frac{b}{a}, \frac{a}{c}, \frac{c}{a}, \frac{b}{c}, \text{ and } \frac{c}{b}$$

$$\text{Sine of an angle} = \frac{\text{opposite side}}{\text{hypotenuse}}, \therefore \text{the } \sin B = \frac{b}{c}$$

$$\text{Cosine of an angle} = \frac{\text{adjacent side}}{\text{hypotenuse}}, \therefore \text{the } \cos B = \frac{a}{c}$$

$$\text{Tangent of an angle} = \frac{\text{opposite side}}{\text{adjacent side}}, \therefore \text{the } \tan B = \frac{b}{a}$$