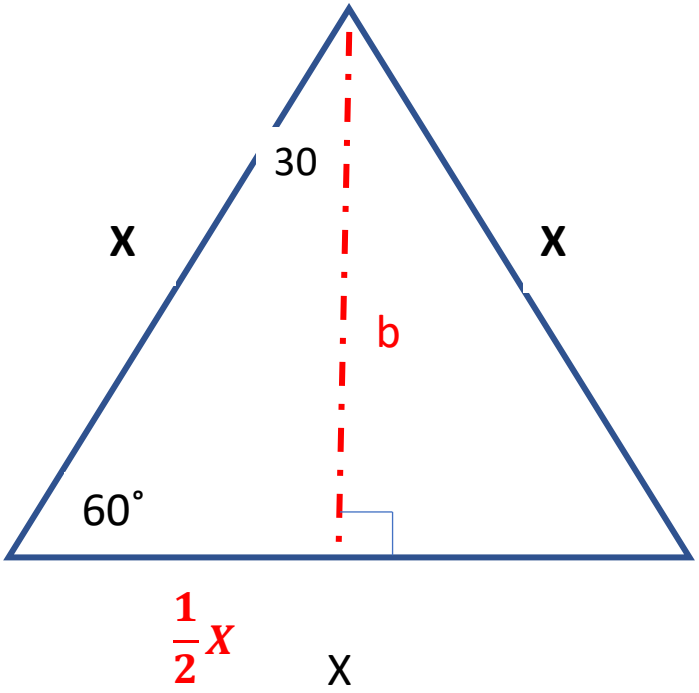
Special Triangles 30-60-90

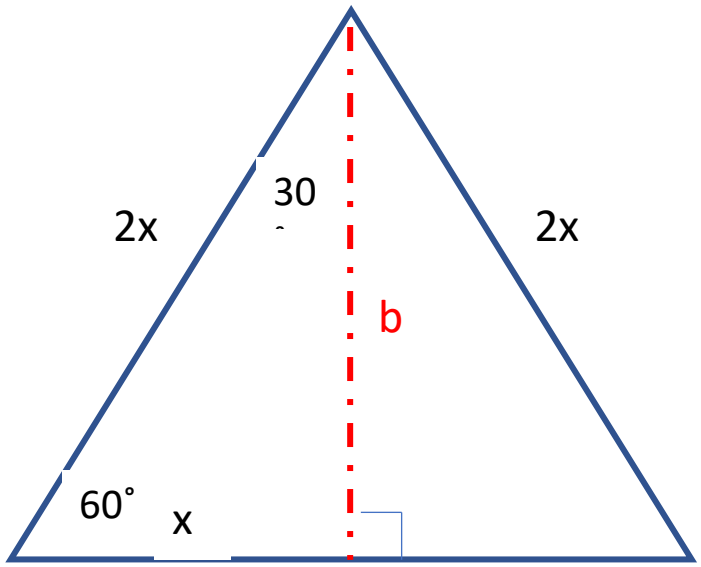
From an equilateral Δ



$$(\frac{1}{2}x)^2 + b^2 = x^2$$

$$b = \frac{\sqrt{3}}{2}x$$

OR



$x^2 + b^2 = (2x)^2$ → $b^2 = 3x^2$, so ∴ $b = \sqrt{3}\,x$

Hypotenuse = 2 shorter side - (2x)

Long side = $\sqrt{3}$ shorter side - $\sqrt{3}$ x