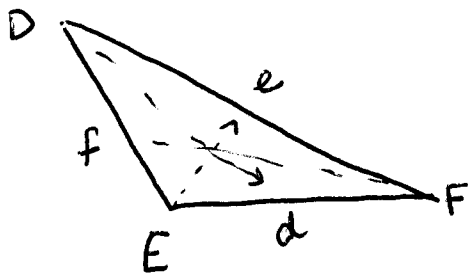
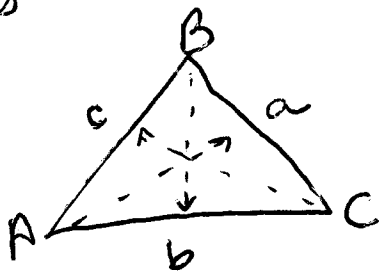


Law of Sines

Three proportional ratios created from the angles and the sides opposite in a given triangle

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

Where capital letters represent Angles and lowercase letters represent sides



Law of Sines

#lovetrig

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

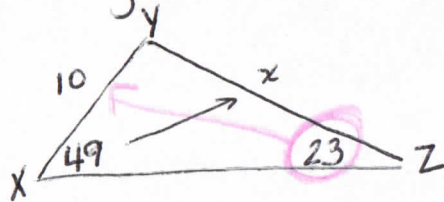
Each ratio represents a side/angle pair. You only need two ratios to use the Law of Sines

Two Cases for LOS

- Given 2 angles and 1 side
- Given 2 sides and 1 angle, but it must be opposite one of the given sides

* Can be used for ANY triangle!!

2 angles and 1 side



$$\frac{\sin 23}{10} = \frac{\sin 49}{x}$$

$$x \sin 23 = 10 \sin 49$$

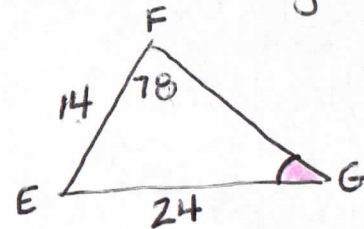
$$x \frac{\sin 23}{\sin 23} = \frac{10 \sin 49}{\sin 23}$$

$$x = 10 \sin(49) / \sin(23)$$

$$x = 19.3$$

- 1) Determine your side/angle pair.
- 2) Determine your variable ratio.
- 3) "Cross multiply" and put denominator in front
- 4) Divide to isolate x, put in calculator, make sure to close parenthesis!!

2 sides and 1 angle opposite



$$\frac{\sin 78}{24} = \frac{\sin G}{14}$$

$$\frac{\sin 78}{24} = \frac{\sin G}{14} = \frac{14 \sin 78}{24} = \sin G$$

$$\sin G = \sin^{-1}(14 \sin(78) / 24)$$

$$\angle G = 34.8^\circ$$

- 1) Determine your side/angle pair.
- 2) Determine your variable ratio
- 3) move denominator up in front of sin to isolate the variable
- 4) take inverse of fraction for angle!