

Name: _____ Date: _____ Per: _____

Trigonometry: The Law of Sines

The LAW OF SINES is a powerful triangle tool which is used to find missing **sides** or **angles** of ANY triangle. By matching up angles with their **opposite sides**, the equation is:

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

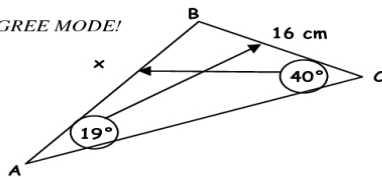
Example: Find the missing side x :

$$\frac{\sin 19^\circ}{16} = \frac{\sin 40^\circ}{x} \text{ DEGREE MODE!}$$

$$\frac{.326}{16} = \frac{.643}{x}$$

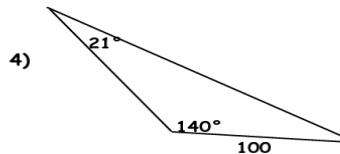
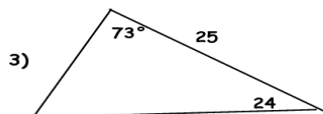
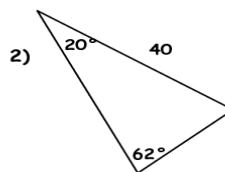
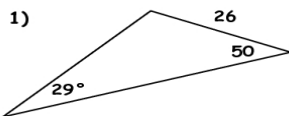
$$.326x = 10.288$$

$$x = 31.56 \text{ cm}$$

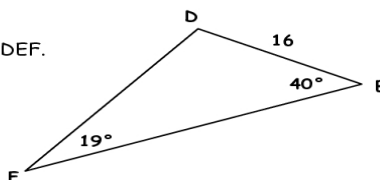


How about finding the other unknowns?

Solve each triangle:



5) Find the perimeter of $\triangle DEF$.



This worksheet was adapted from <http://www.bgsd.k12.wa.us/riv/homework/Geometry/LawOfSines.doc>