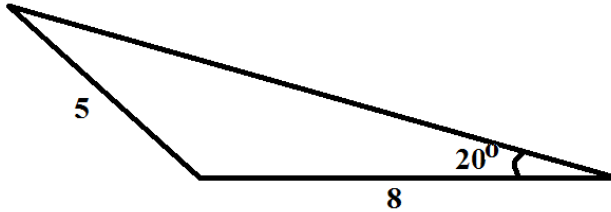


YOUR NAME: _____

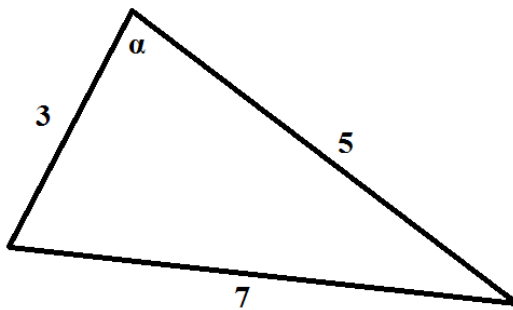
George Voutsadakis

Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [4 points] Solve the following triangle (i.e., find all missing elements) and compute its area.



2. [4 points] Consider the triangle shown in the figure. Find the size of the angle α in degrees and compute the area in two different ways.



3. [4 points] Solve the following trigonometric equation for $0 \leq \theta < 2\pi$.

$$4 \sin 2\theta \cos \theta - 2\sqrt{2} \cos \theta + 2 \sin 2\theta - \sqrt{2} = 0.$$

(Hint: Find a way to factor!)