Your name: Thursday June 2, 2022

MPM2D Unit 6 Test B	**TOTAL / 30**

Pythagorean Theorem: $a^2 + b^2 = c^2$

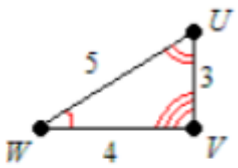
SOH CAH TOA: $sin\,\theta = \frac{opp}{hyp}$ $cos\,\theta = \frac{adj}{hyp}$ $tan\,\theta = \frac{opp}{adj}$

Sine Law: $\frac{a}{sin\,A} = \frac{b}{sin\,B} = \frac{c}{sin\,C}$ $\frac{sinA}{a} = \frac{sinB}{b} = \frac{sinC}{c}$

Cosine Law: $c^2 = a^2 + b^2 - 2ab\,cosC$ $cos\,C = \frac{a^2+b^2-c^2}{2ab}$

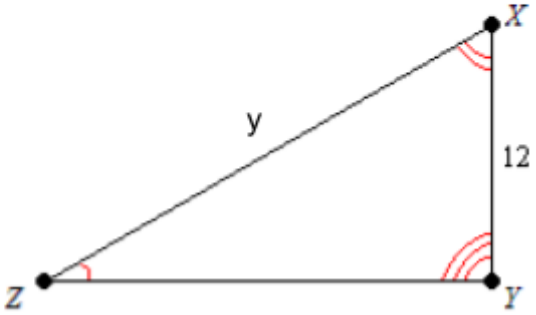
1. This is a pair of similar triangles. [4 A]

a) Write a similarity statement.



b) What is the scale factor?

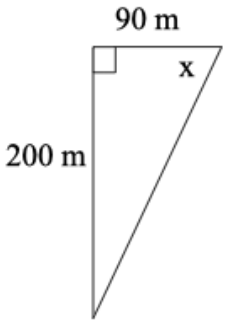
c) What is the length of *y* ? (No units needed)



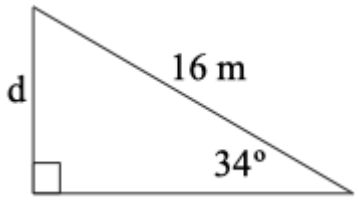
d) If the area of the smaller triangle is 6 units^2, what is the area of the larger triangle?

2. Calculate the unknown length *or* angle in each triangle.

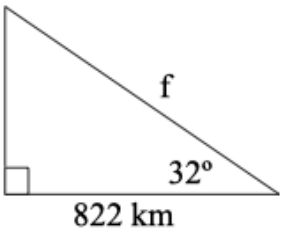
a) [3 A]



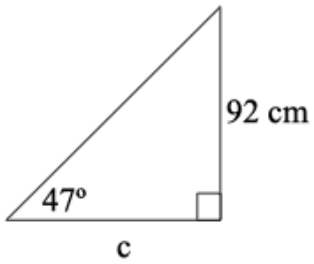
b) [3 A]



c) [3 A]

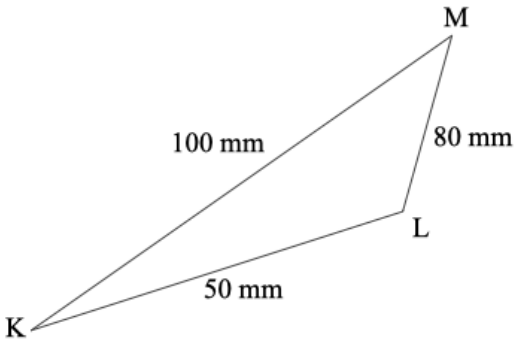


d) [3 A]

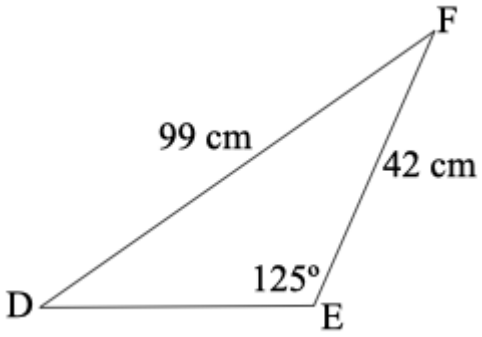


3. Calculate the specified length or angle in each triangle.

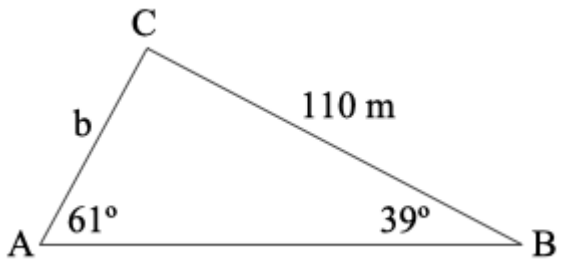
a) Solve for angle L [3 T]



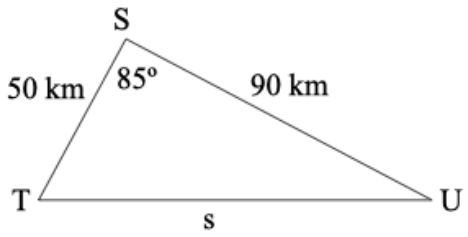
b) Solve for angle D [3 T]



c) Solve for side length *b*. [3 T]



d) Solve for side length *s* [3 T]



4. Below is a molecule of hypofluorous acid.
The H and the O are separated by a distance of 96.4 pm (“picometers”).
The F and the O are separated by a distance of 144.2 pm.
The bond angle at O is 97.2°.
How far apart at the H and F? Round your answer to the nearest tenth. [2 A]