

Your name:

Thursday June 2, 2022

MPM2D Unit 6 Test A

TOTAL / 30

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

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

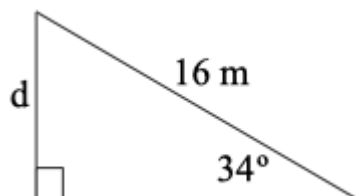
Sine Law: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

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

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

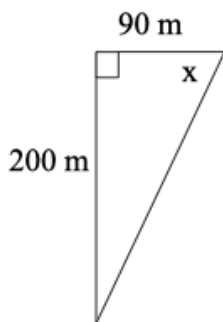
a)

[3 A]



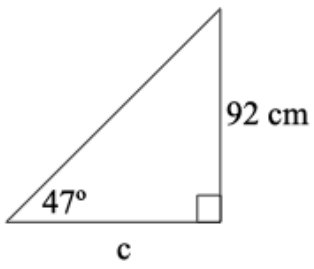
b)

[3 A]



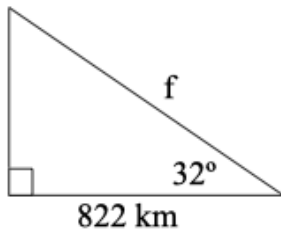
c)

[3 A]



d)

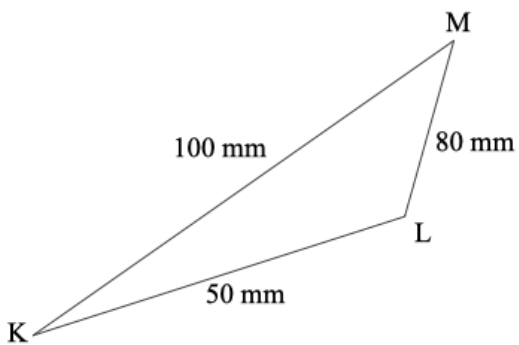
[3 A]



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

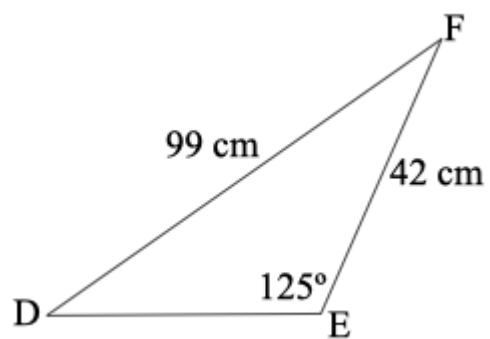
a) Solve for angle L

[3 T]



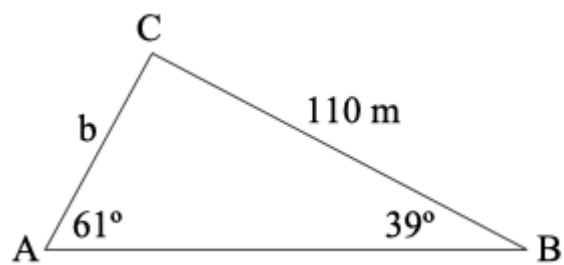
b) Solve for angle D

[3 T]



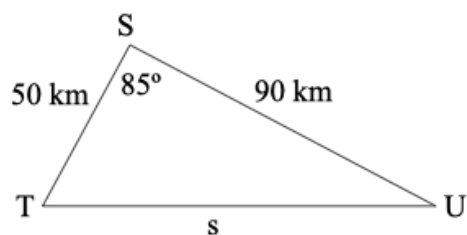
c) Solve for side length b .

[3 T]



d) Solve for side length s

[3 T]



3. Below is a molecule of hypofluorous acid.

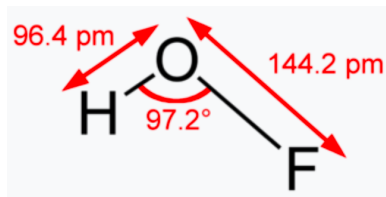
The H and the O are separated by a distance of 96.4 pm (“picometers”).

The F and the O are separated by a distance of 144.2 pm.

The bond angle at O is 97.2° .

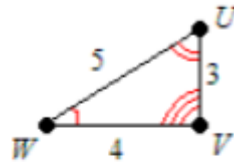
How far apart are the H and F? Round your answer to the nearest tenth.

[2 A]



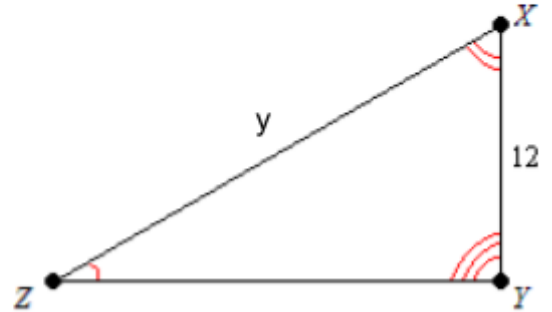
4. This is a pair of similar triangles. [4 A]

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 units², what is the area of the larger triangle?