MFM 2P1 TRIGONOMETRY PRACTICE TEST

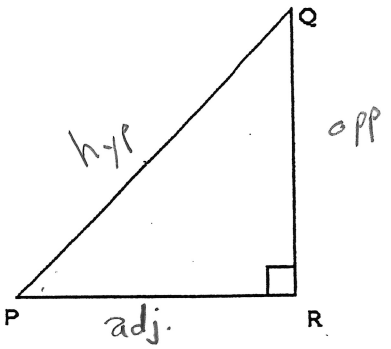
1. Label the sides of the following triangle with respect to <P:

hypotenuse
opposite
adjacent

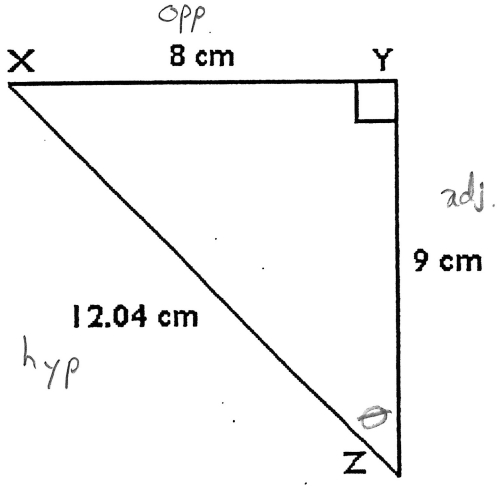
SOH → $\sin\theta = \frac{opp}{hyp}$

CAH → $\cos\theta = \frac{adj}{hyp}$

TOA → $\tan\theta = \frac{opp}{adj}$



2. Consider ΔXYZ. State the following trigonometric ratios in decimal form. Round to two decimals.



$\tan Z = \frac{opp}{adj} = \frac{8}{9}$

$\sin Z = \frac{opp}{hyp} = \frac{8}{12.04}$

$\cos Z = \frac{adj}{hyp} = \frac{9}{12.04}$

3. Evaluate the following ratios to 2 decimal places.

a) $\sin 49°$ = 0.75

b) $\cos 220°$ = −0.77

c) $\tan 114°$ = −2.25

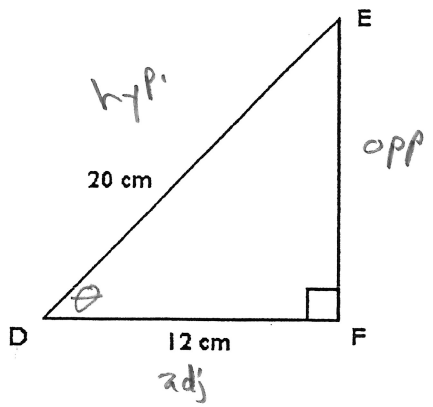
4. Evaluate the following angles to the nearest degree.

a) $\cos^{-1}(0.76)$ = 41°

b) $\tan^{-1}(\frac{11}{3})$ = 75°

c) $\sin^{-1}(0.2)$ = 12°

5. Determine the measure of $\angle D$ in ΔDEF. Round to the nearest degree.



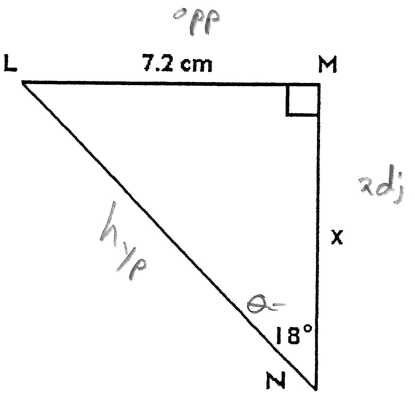
$\cos\theta = \frac{adj}{hyp.}$

$\cos\theta = \frac{12}{20}$

$\theta = \cos^{-1}\left(\frac{12}{20}\right)$

$\theta \approx 53^\circ$

6. Determine the measure of the unknown side in ΔLMN. Round to the nearest centimeter.



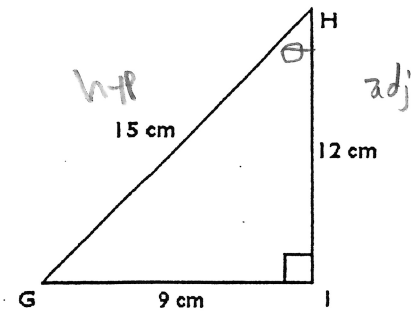
$\tan\theta = \frac{opp}{adj}$

$\frac{\tan(18^\circ)}{1} = \frac{7.2}{x}$

$\frac{x\tan(18^\circ)}{\tan(18^\circ)} = \frac{7.2}{\tan(18^\circ)}$

$x \approx 22\text{ cm}$

7. For the side measures given, determine if the sine ratio of ∠H is correct. Explain your solution.



hyp adj

opp

$\sin H = \frac{15}{9}$?

CORRECT (INCORRECT) (Circle)

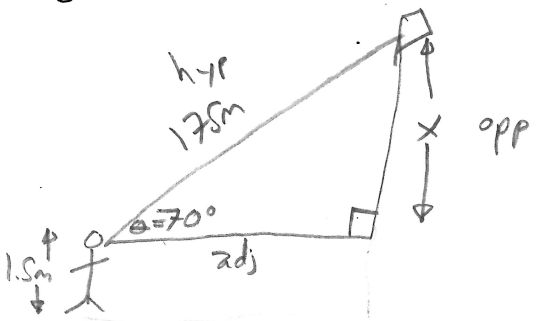
Why? Since $\sin H = \frac{opp}{hyp}$ and not $\sin H = \frac{hyp}{opp}$

$\sin\theta = \frac{opp}{hyp}$

$\sin\theta = \frac{9}{15}$

$\sin H = \frac{9}{15}$

8. George is flying a kite on a string 175 m long. The string makes an angle of 70° with the ground. George is holding the end of the string 1.5 m above the ground. How high is the kite? Round to 1 decimal place.



$\sin\theta = \frac{opp}{hyp}$

$\frac{\sin(70°)}{1} = \frac{x}{175}$

$x = 175\sin(70°)$

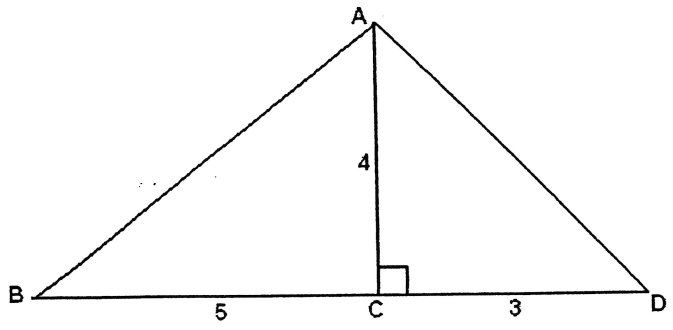
$x = 164.4m$

height $= x + 1.5$

$= 164.4 + 1.5$

$\approx 165.9m$

9. Use trigonometry to calculate the total measure of <BAD. Round to 1 decimal place.



10. A lifeguard is sitting at the top of her post. Suddenly she hears a child calling for help in the water. Her chair is 3 meters high and the angle of depression is 53°. If her upper body is 1 meter in length, how far is the swimmer from the base of the chair? Round to the nearest meter.