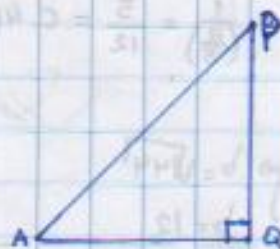


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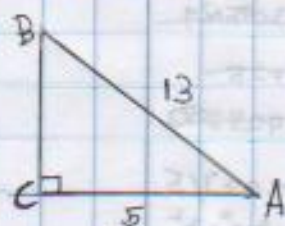
3. An observer, 2200 feet from the base of a building PQ, finds that the angle of elevation (between the horizontal and the line of sight) is such that $\tan A = 2/5$. Find the height of the building.

$$\tan A = \frac{2}{5} \text{ opposite (PQ)} \text{ adjacent (AQ)}$$

$$PQ = 2$$



4. In triangle ABC, right angle at C, AB = 13, BC = 12, AC = 5. Find the six trigonometric functions of $\angle A$. Do the same for $\angle B$.



$$\sin A = \frac{BC}{AB} = \frac{12}{13}$$

$$\cos A = \frac{AC}{AB} = \frac{5}{13}$$

$$\tan A = \frac{12}{5} \approx 2.4, \quad \cot A = \frac{1}{\tan A} = \frac{5}{12}$$

$$\csc A = \frac{1}{\sin A} = \frac{13}{12} \approx 1.08333333, \quad \sec A = \frac{1}{\cos A} = \frac{13}{5} \approx 2.6$$

$$\sin B = \frac{AC}{AB} = \frac{5}{13} \approx 0.384615385$$

$$\cos B = \frac{BC}{AB} = \frac{12}{13} \approx 0.923076923$$

$$\tan B = \frac{5}{12} \approx 0.416666667, \quad \cot B = \frac{1}{\tan B} = \frac{12}{5} = 2.4$$

$$\csc B = \frac{1}{\sin B} = \frac{13}{5} = 2.6, \quad \sec B = \frac{1}{\cos B} = \frac{13}{12} \approx 1.08333333$$

5. If an acute angle A has its tangent equal to 5/8, find its other functions. (Draw a right triangle and use the Pythagorean theorem to find the remaining sides.)

$$h^2 = BA^2 = 5^2 + 8^2 = 89$$

$$h = \sqrt{89} \approx 9.43398113$$

$$\sin A = \frac{5}{\sqrt{89}}, \quad \cos A = \frac{8}{\sqrt{89}}, \quad \tan A = \frac{5}{8}$$

$$\csc A = \frac{1}{\sin A} = \frac{\sqrt{89}}{5} \approx 1.88679622$$

$$\sec A = \frac{1}{\cos A} = \frac{\sqrt{89}}{8} \approx 1.17924764$$

$$\cot A = \frac{1}{\tan A} = \frac{8}{5} = 1.6$$



05/02/2019

FOR THE TASKS

$$\text{LGI: } \frac{1}{\left(\frac{5}{12}\right)} = \frac{12}{5}$$

$$\text{For } \frac{1}{\left(\frac{1}{12}\right)} = \frac{1 \times 12}{1 \times 1} = 12$$

REMEMBER 'GIVEN' $\tan A = \frac{5}{8}$
 DON'T MIX UP NUMERATOR
 THE ORIGINAL PROBLEM
 HAVE $\tan = \frac{15}{8}$

20/02/2019