

Sample Questions Set 14

$$1. \sin(A) = \frac{\text{opp}}{\text{hyp}} = p/r$$

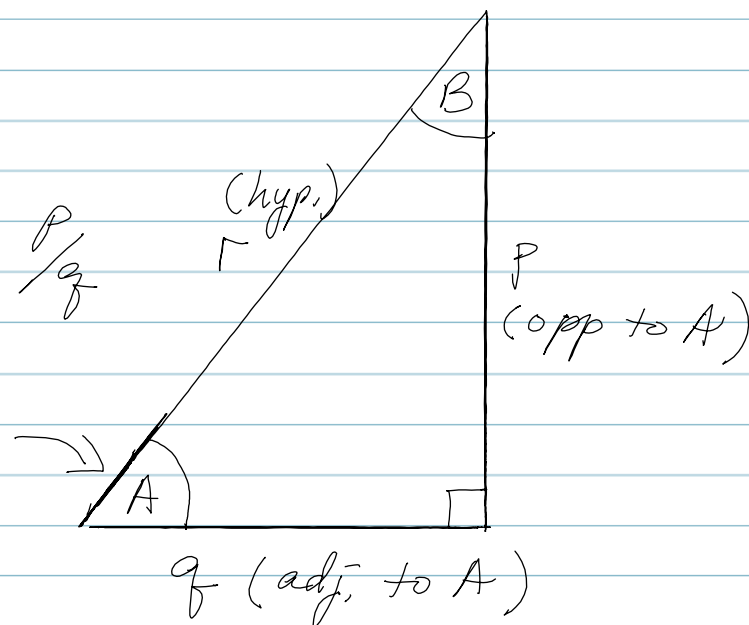
$$\cos(A) = \frac{\text{adj}}{\text{hyp}} = q/r$$

$$\tan(A) = \frac{\text{opp}}{\text{adj}} = \frac{\sin A}{\cos A} = \frac{p}{q}$$

$$\circ \csc(A) = \frac{1}{\sin A} = \frac{r}{p}$$

$$\circ \sec(A) = \frac{1}{\cos A} = \frac{r}{q}$$

$$\circ \cot(A) = \frac{1}{\tan A} = \frac{q}{p}$$



$$2. A \text{ and } B : A + B + 90^\circ = 180^\circ$$

$$A + B = 90^\circ$$

$$\text{OR: } A + B + \pi/2 = \pi \Rightarrow A + B = \pi/2$$

A and B are complementary angles.

3. Special angles.

30° ($\pi/6$ radians), 60° ($\pi/3$ rad.)

45° ($\pi/4$ rad.)

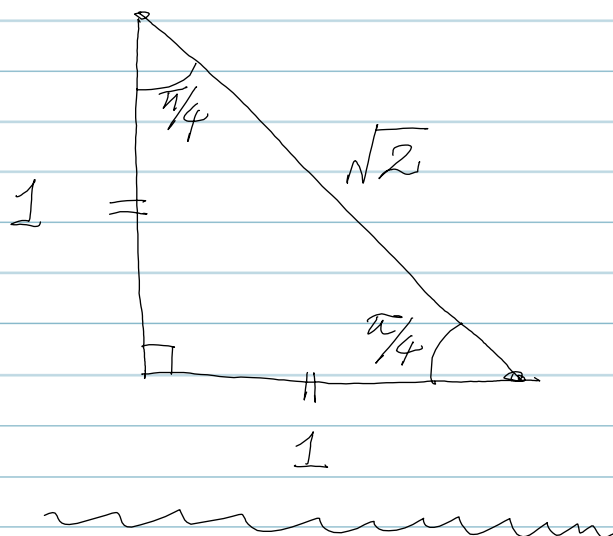
30° and 60° complementary.

45° self-complementary ($45^\circ + 45^\circ = 90^\circ$)

4. Trig ratios of Special Angles.
 45° ($\pi/4$ rad)

$$\sin \frac{\pi}{4} = \frac{1}{\sqrt{2}}$$
$$= \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$



$$\tan \frac{\pi}{4} = \frac{1}{1} = 1$$

30° ($\pi/6$ rad) and 60° ($\pi/3$ rad)

$$\sin 30^\circ = \sin \pi/6 = \frac{1}{2}$$

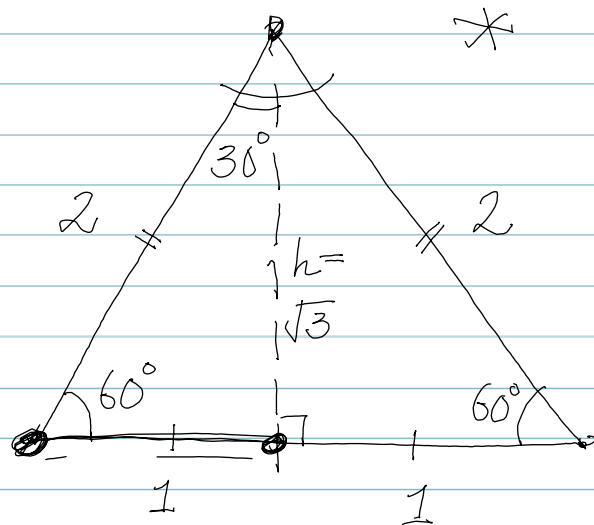
$$\cos 30^\circ = \cos \pi/6 = \frac{\sqrt{3}}{2}$$

$$\tan 30^\circ = \tan \pi/6 = \frac{1}{\sqrt{3}}$$
$$= \frac{\sqrt{3}}{3}$$

$$\sin 60^\circ = \sin \pi/3 = \frac{\sqrt{3}}{2}$$

$$\cos 60^\circ = \cos \pi/3 = \frac{1}{2}$$

$$\tan 60^\circ = \tan \pi/3 = \frac{\sqrt{3}}{1}$$
$$= \sqrt{3}$$



$$h^2 + 1^2 = 2^2 = 4$$

$$h^2 = 3 \Rightarrow h = \sqrt{3}$$