BECA / Dr. Huson / Geometry 10th Grade
Unit 11: Algebra II introduction Name:
18 May 2020

11.7 Problem set: Radian measures and standard trigonometry ratios

1. A right $\triangle ABC$ is shown with side lengths 1, $\sqrt{3}$, and 2, as marked.

   Identify each true statement

   ☐ (a) $1^2 + (\sqrt{3})^2 = 2^2$

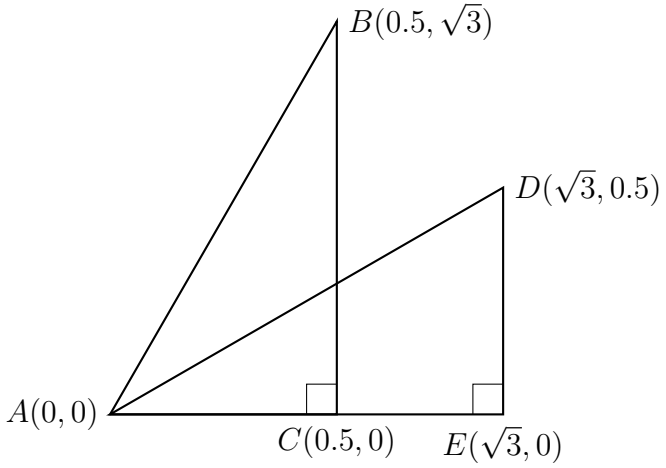
   ☐ (b) $\cos A = \dfrac{1}{2}$

   ☐ (c) $\sin B = \dfrac{\sqrt{3}}{2}$

   ☐ (d) $m\angle A = 60°$

   ☐ (e) $\cos B = \dfrac{\sqrt{3}}{2}$

   ☐ (f) $m\angle A = 2 \times m\angle B$

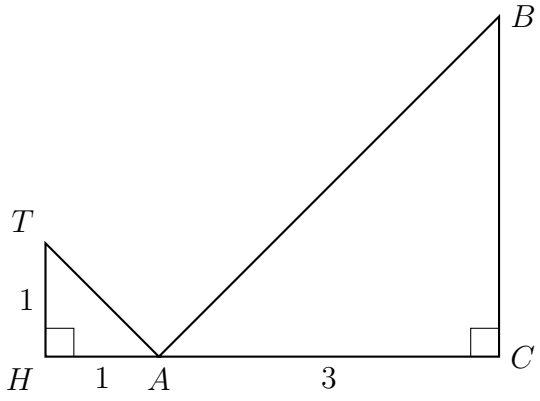


2. Two similar, right isosceles triangles $\triangle HAT \sim \triangle CAB$ have a scale factor $k = 3$. Angles $\angle H$ and $\angle C$ measure 90° and $HA = HT = 1$, as shown.

   (a) Find the exact length of the hypotenuse TA

   (b) Write down the degree measure of $\angle T$

   (c) Find the altitude of $\triangle CAB$, BC



3. Convert the angle radian measure to degrees. (recall $360° = 2\pi$ radians)

   (a) $\dfrac{\pi}{6}$ (b) $\dfrac{\pi}{4}$ (c) $\dfrac{2\pi}{3}$

4. Convert the degree measure to radians (state an *exact* value, i.e. a fraction times π).

   (a) 60° (b) 45° (c) 135°