NAME:_____

1. In right triangle ΔABC, sin $A = \frac{1}{2}$. What is cos A?

   [A] $\frac{1}{2}$ [B] $\frac{\sqrt{3}}{3}$ [C] $\frac{\sqrt{2}}{2}$ [D] $\frac{\sqrt{3}}{2}$ [E] none of the above

2. Given $\sin\theta = \frac{5}{11}$ and $\sec\theta < 0$, find $\cos\theta$ and $\tan\theta$.

   [A] $\cos\theta = -\frac{4\sqrt{6}}{11}$, $\tan\theta = -\frac{5}{4\sqrt{6}}$

   [B] $\cos\theta = \frac{4\sqrt{6}}{11}$, $\tan\theta = \frac{5}{4\sqrt{6}}$

   [C] $\cos\theta = -\frac{4\sqrt{6}}{11}$, $\tan\theta = \frac{5}{4\sqrt{6}}$

   [D] $\cos\theta = -4\sqrt{6}$, $\tan\theta = -\frac{11}{4\sqrt{6}}$

3. ΔABC has a right angle at C. Write BC and AC in terms of sin A or cos A. Then use the Pythagorean Theorem to show that $(\sin A)^2 + (\cos A)^2 = 1$.

[1] D

[2] A

$BC = AB(\sin\ A)$ and $AC = AB(\cos\ A)$.

$(BC)^2 + (AC)^2 = (AB)^2(\sin\ A)^2 + (AB)^2(\cos\ A)^2$

$= (AB)^2[(\sin\ A)^2 + (\cos\ A)^2]$.

[3] By the Pythagorean Theorem, $(BC)^2 + (AC)^2 = (AB)^2$, so $(\sin\ A)^2 + (\cos\ A)^2 = 1$.