

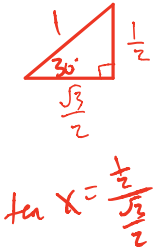
Practice Exercise 14



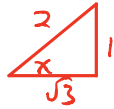
2. $\frac{1}{2} - 1 + 2$

1. Evaluate $2 \sin 30^\circ - \tan 45^\circ + \sec 60^\circ$
- A. 1 D. $\sqrt{2} + 1$
 B. 2 E. $\sqrt{2} + 2$
 C. 3

2. If $\sin x = \frac{1}{2}$, what does $\tan x = ?$



- A. $\frac{\sqrt{2}}{3}$ D. $\frac{\sqrt{2}}{2}$
 B. $\sqrt{3}$ E. $\frac{1}{4}$
 C. $\frac{\sqrt{3}}{3}$



3. Simplify $\frac{\cos x}{\csc x} + \cos^2 x \tan x$.

- A. $2 \sin x \cos x$
 B. $(\sin x)(\cos x + 1)$
 C. 1
 D. $\tan x + \cos x \sin x$
 E. $\sin x + \cos x \sin x$
- Handwritten notes: $\sin x \cos x + \cos^2 x \cdot \frac{\sin x}{\cos x}$ and $\sin x \cos x + \sin x \cos x$*

4. Simplify $\cot A \cos A \tan A$.

- A. $\frac{1}{\cos A}$ D. $\sin A$
 B. $\cos A$ E. $\sec A$
 C. $\frac{1}{\sin A}$

5. Find the value of $\cos(45^\circ + 60^\circ)$.

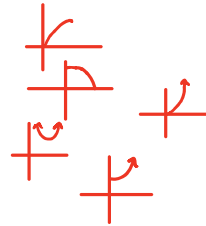
- A. $\frac{\sqrt{6} + \sqrt{2}}{4}$
 B. $\frac{\sqrt{6} - \sqrt{2}}{4}$
 C. $\frac{\sqrt{2} - \sqrt{6}}{4}$
 D. 1
 E. 0
- Handwritten notes: $\cos 45^\circ \cos 60^\circ - \sin 45^\circ \sin 60^\circ$, $\frac{\sqrt{2}}{2} \cdot \frac{1}{2} - \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{3}}{2}$, $\frac{\sqrt{2}}{4} - \frac{\sqrt{6}}{4}$, $\frac{\sqrt{2} - \sqrt{6}}{4}$*

6. If $\sin \alpha = \frac{3}{5}$ and $\cos \beta = \frac{12}{13}$ and α and β are in quadrant I, then what is the value of $\sin(\alpha + \beta)$?

- A. 0 D. $\frac{56}{65}$
 B. $\frac{20}{65}$ E. 1
 C. $\frac{36}{65}$
- Handwritten notes: $\sin \alpha \cos \beta + \sin \beta \cos \alpha = \frac{3}{5} \cdot \frac{12}{13} + \frac{5}{13} \cdot \frac{4}{5} = \frac{36}{65} + \frac{20}{65}$*

7. As θ increases from 0° to 90° , which of the following is true?

- A. $\sin \theta$ decreases
 B. $\cos \theta$ increases
 C. $\tan \theta$ decreases
 D. $\csc \theta$ increases
 E. $\sec \theta$ increases



8. The amplitude of $y = \sin \frac{1}{2} \theta$ is:

- A. 4
 B. 2
 C. 1
 D. $\frac{1}{2}$
 E. It has no amplitude.

9. The tangent function is equal to all of the following except:

- A. $\frac{\sin}{\cos}$ D. $\frac{1}{\cot}$
 B. $\frac{\sec}{\csc}$ E. $\frac{1}{\cos \sin}$

C. $\frac{1}{\sec}$

10. An engine turns 2,500 RPMs (revolutions per minute). Through how many degrees does the engine turn?

- A. 900,000 D. 3,600
 B. 21,600 E. 62,500
 C. 36,000

$\frac{2500 \text{ rev}}{1 \text{ min}} \cdot \frac{360 \text{ DEG}}{1 \text{ Rev}}$