

TRIGONOMETRY PRACTICE TEST

This test consists of 20 questions. While you may take as much as you wish, it is expected that you are able to complete it in about 45 minutes.

For proper course placement, please:

- Take the test seriously and honestly
- Do your own work without any assistance. Do not use any reference materials, calculator, or any other computing aid
- Do not guess. If you don't know how to work a problem, leave the answer blank.

1. The exact value of $\sin 60^\circ$ is

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

2. What is the radian measure of the angle whose degree measure are 300° ?

- A) $\frac{4}{3}\pi$ B) $\frac{11}{6}\pi$ C) $\frac{11}{12}\pi$ D) $\frac{\pi}{6}$ E) $\frac{5}{3}\pi$

3. If $\sin \theta = -$ --

- A) $x=0$ and $x=\frac{\pi}{2}$ B) $x=\frac{\pi}{2}$ and $x=2\pi$
 C) $x=\frac{\pi}{2}$ and $x=\frac{3\pi}{2}$ D) $x=-\frac{\pi}{2}$ and $x=\pi$ E) answer not given

7. Which of the following is the graph of $y=\sin x+4$?

(A)

(B)

(C)

(D)

(E)

8. The exact value of $\tan 60^\circ$ is

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

9. The exact value of $(\cos^2 \frac{\pi}{4} + \tan \frac{\pi}{4})$ is

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

10. $\tan x \cos x =$

- A) $1+\tan x$ B) $\sin x$ C) $-\cos x$ D) $\frac{1}{\sin x}$ E) none of the above

11. $\sin^2 30^\circ - \tan 45^\circ =$

- A) $1/4$ B) $-\frac{1}{2}$ C) $\frac{1}{2}$ D) $-3/4$ E) none of the above

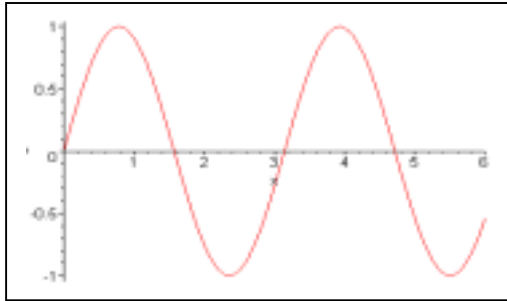
12. Perform the addition and simplify: $2 \tan x \cos^2 x =$

- A) $\cos 2x$ B) $2 \sec^2 x + 1$ C) $2 \cos^2 x$ D) $\sin 2x$ E) none of the above

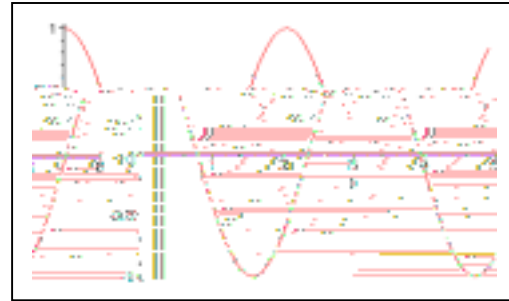
13. $\frac{\sin(x)}{\tan(x)} - \cos x$ is equal to

- A) $\tan x$ B) $-\sin x$ C) $\cos x$ D) $-\cot x$ E) 0

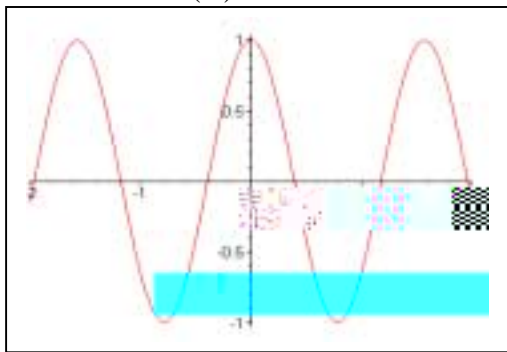
14. Which of the following is the graph of $y = \cos 4x$?



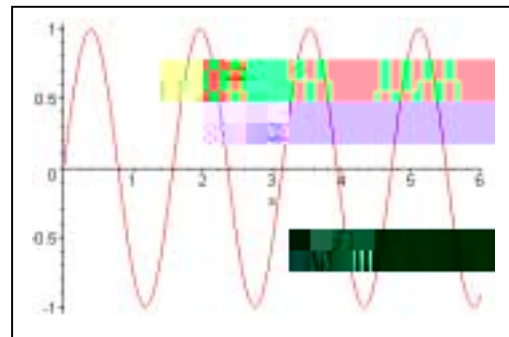
(A)



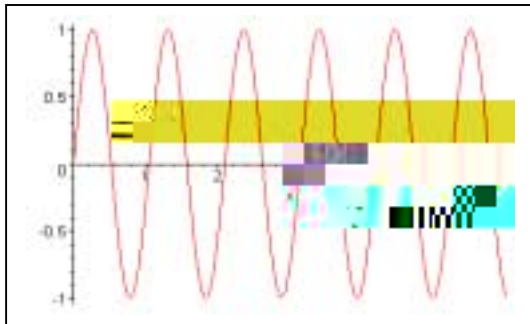
(B)



(C)



(D)



(E)

15. For which angles θ , with $0^\circ \leq \theta \leq 180^\circ$, is $\cos 2\theta = \frac{\sqrt{2}}{2}$

- A) 22.5° and 157.5° B) 60° and 120° C) 125° D) 0° and 22.5° E) none

16. If $2\cos \theta - \sqrt{3} = 0$ and $0^\circ \leq \theta < 360^\circ$, then

- A) $\theta = 15^\circ$ or $\theta = 165^\circ$ B) $\theta = 60^\circ$ or $\theta = 120^\circ$
 C) $\theta = 30^\circ$ or $\theta = 150^\circ$ D) $\theta = 30^\circ$ or $\theta = 330^\circ$ E) $\theta = 30^\circ$ or $\theta = 210^\circ$

17. For which values of x in the interval $0 < x < \pi$ does $\tan^2 x - \tan x = 0$?

Solution:

1. B
2. E
3. C
4. D
5. D
6. E
7. D
8. A
9. E
10. E
11. D
12. D
13. E
14. C
15. A
16. D
17. E
18. A
19. A
20. E