

A2.A.56: Determining Trigonometric Functions 2: Know the exact and approximate values of the sine, cosine, and tangent of 0° , 30° , 45° , 60° , 90° , 180° , and 270° angles

1 If $f(x) = \cos x + \tan \frac{x}{3}$, then $f(\pi)$ is

- 1) $\frac{\sqrt{3}+3}{3}$
- 2) $\frac{\sqrt{3}-3}{3}$
- 3) $\sqrt{3}+1$
- 4) $\sqrt{3}-1$

5 If $f(x) = \sin^2 x$, then $f\left(\frac{\pi}{2}\right)$ equals

- 1) 1
- 2) $\frac{3}{4}$
- 3) $\frac{1}{2}$
- 4) $\frac{1}{4}$

2 At $x = \frac{\pi}{2}$, the difference $2\sin x - \cos 2x$ is

- 1) 1
- 2) 2
- 3) 3
- 4) 0

6 If $f(x) = \sin x + \cos 2x$, then $f(\pi)$ is

- 1) 1
- 2) 2
- 3) 0
- 4) -1

3 The value of $\cos^2\left(\frac{\pi}{4}\right)$ is

- 1) 1
- 2) $\frac{1}{2}$
- 3) $\frac{1}{4}$
- 4) 0

7 The value of $\sin \frac{\pi}{3} \cos \pi$ is

- 1) $-\frac{\sqrt{3}}{2}$
- 2) $\frac{1}{2}$
- 3) $-\frac{1}{2}$
- 4) 0

4 The value of $\sin \frac{\pi}{6} + \tan \frac{\pi}{4}$ is

- 1) $\frac{3}{2}$
- 2) $\frac{\sqrt{3}+2}{2}$
- 3) $\frac{1+\sqrt{2}}{2}$
- 4) $\frac{\sqrt{3}+\sqrt{2}}{2}$

8 What is the value of $\tan \frac{\pi}{3} + \cos \pi$?

- 1) $\frac{\sqrt{3}+3}{3}$
- 2) $\frac{\sqrt{3}-3}{3}$
- 3) $\sqrt{3}-1$
- 4) $\sqrt{3}+1$

9 If $f(x) = \sin \frac{x}{4}$, find $f(\pi)$ equals

- 1) 1
- 2) $\frac{1}{2}\sqrt{3}$
- 3) $\frac{1}{2}\sqrt{2}$
- 4) $\frac{1}{2}$

10 The value of $\cos \frac{\pi}{3} - \sin \frac{3\pi}{2}$ is

- 1) $1\frac{1}{2}$
- 2) $\frac{1}{2}$
- 3) $-\frac{1}{2}$
- 4) $-1\frac{1}{2}$

11 If $f(x) = \cos 3x + \sin x$, then $f\left(\frac{\pi}{2}\right)$ equals

- 1) 1
- 2) 2
- 3) -1
- 4) 0

12 The value of $\sin\left(\frac{3\pi}{2}\right) - \cos\left(\frac{\pi}{3}\right)$ is

- 1) $-1\frac{1}{2}$
- 2) $1\frac{1}{2}$
- 3) $\frac{1}{2}$
- 4) $-\frac{1}{2}$

13 The numerical value of $\sin \frac{3\pi}{2} + \cos \frac{\pi}{4}$ is

- 1) $1 + \frac{\sqrt{2}}{2}$
- 2) $\frac{\sqrt{2}}{2}$
- 3) $-1 + \frac{\sqrt{2}}{2}$
- 4) -1

14 If $f(x) = \sin 2x + \cos x$, what is $f\left(\frac{\pi}{4}\right)$?

- 1) $1 + \frac{\sqrt{2}}{2}$
- 2) $\frac{1 + \sqrt{3}}{2}$
- 3) $\sqrt{2}$
- 4) 0

15 Find the value of $\sin^2 \frac{\pi}{3}$.

16 Find the value of $\sin \frac{\pi}{2} - \cos \frac{3\pi}{2}$.

17 If $f(x) = 3 \cos x$, find the numerical value of $f(\pi)$.

18 If $f(x) = 2 \cos x$, find $f\left(\frac{\pi}{3}\right)$.

19 What is the numerical value of the product $\left(\tan \frac{\pi}{4}\right)\left(\cos \frac{\pi}{3}\right)$?

20 If $f(x) = \sin x + \cos \frac{x}{2}$, find $f(2\pi)$.

31 If $f(x) = \sin 2x + \cos x$, find the value of $f\left(\frac{\pi}{2}\right)$.

21 If $f(x) = \cos 2x$, find $f\left(\frac{\pi}{2}\right)$.

32 If $f(x) = \tan x$, evaluate $f\left(\frac{\pi}{4}\right)$.

22 If $f(x) = \cos x + \sin x$, find the value of $f(x)$ when $x = \frac{3\pi}{2}$.

23 If $f(\theta) = \tan \theta - 2 \cos \theta$, find $f(\pi)$.

24 Evaluate: $\cos \frac{\pi}{2} + \sin \frac{3\pi}{2}$

25 If $f(x) = 4 \sin \frac{x}{3}$, find $f(\pi)$.

26 If $f(x) = \sin^2 x + \cos^2 x$, find $f\left(\frac{\pi}{4}\right)$.

27 If $f(x) = 2 \sin^2 x + \sin x + 1$, find the value of $f\left(\frac{\pi}{6}\right)$.

28 If $f(x) = \sin 3x + \cos x$, what is $f\left(\frac{\pi}{2}\right)$?

29 If $f(x) = \sin \frac{1}{2}x + 2 \cos x$, evaluate $f(\pi)$.

30 If $f(x) = 2 \cos^2 x + \sin x - 1$, find the value of $f\left(\frac{\pi}{2}\right)$.

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Answer Section

1	ANS: 4	PTS: 2	REF: 068129siii
2	ANS: 3	PTS: 2	REF: 068437siii
3	ANS: 2	PTS: 2	REF: 088426siii
4	ANS: 1	PTS: 2	REF: 068528siii
5	ANS: 1	PTS: 2	REF: 089322siii
6	ANS: 1	PTS: 2	REF: 068924siii
7	ANS: 1	PTS: 2	REF: 088935siii
8	ANS: 3	PTS: 2	REF: 089025siii
9	ANS: 3	PTS: 2	REF: 019420siii
10	ANS: 1	PTS: 2	REF: 069531siii
11	ANS: 1	PTS: 2	REF: 069718siii
12	ANS: 1	PTS: 2	REF: 089722siii
13	ANS: 3	PTS: 2	REF: 010017siii
14	ANS: 1	PTS: 2	REF: 080317siii

15 ANS:

$$\frac{3}{4}$$

PTS: 2 REF: 018402siii

16 ANS:

1

PTS: 2 REF: 068415siii

17 ANS:

−3

PTS: 2 REF: 018511siii

18 ANS:

1

PTS: 2 REF: 088711siii

19 ANS:

$$\frac{1}{2}$$

PTS: 2 REF: 068814siii

20 ANS:

−1

PTS: 2 REF: 010408siii

- 21 ANS:
-1
PTS: 2 REF: 019012siii
- 22 ANS:
-1
PTS: 2 REF: 069406siii
- 23 ANS:
2
PTS: 2 REF: 089936siii
- 24 ANS:
-1
PTS: 2 REF: 019507siii
- 25 ANS:
 $2\sqrt{3}$
PTS: 2 REF: 069510siii
- 26 ANS:
1
PTS: 2 REF: 019606siii
- 27 ANS:
2
PTS: 2 REF: 019812siii
- 28 ANS:
-1
PTS: 2 REF: 019905siii
- 29 ANS:
-1
PTS: 2 REF: 069909siii
- 30 ANS:
0
PTS: 2 REF: 010011siii
- 31 ANS:
0
PTS: 2 REF: 060002siii
- 32 ANS:
1
PTS: 2 REF: 010102siii