

A2.A.76: Angle Sum and Difference Identities 5: Apply the angle sum and difference formulas for trigonometric functions

- 1 The expression $\cos(\pi - x)$ is equivalent to
1) $\sin x$ 2) $-\sin x$ 3) $\cos x$ 4) $-\cos x$
- 2 The expression $\cos(90^\circ + \theta)$ is equivalent to
1) $\cos \theta$ 2) $-\cos \theta$ 3) $\sin \theta$ 4) $-\sin \theta$
- 3 The expression $\sin(\theta + 90)^\circ$ is equivalent to
1) $-\sin \theta$ 2) $-\cos \theta$ 3) $\sin \theta$ 4) $\cos \theta$
- 4 The expression $\sin(90^\circ - \theta)$ is equivalent to
1) $\cos \theta$ 2) $\sin \theta$ 3) $-\cos \theta$ 4) $-\sin \theta$
- 5 The expression $\sin(180^\circ - x)$ is equivalent to
1) $\sin x$ 2) $\cos x$ 3) $-\sin x$ 4) $-\cos x$
- 6 The expression $\cos(270^\circ - A)$ is equivalent to
1) $\cos A$ 2) $-\cos A$ 3) $\sin A$ 4) $-\sin A$
- 7 The value of $\sin(180 + x)$ is equivalent to
1) $-\sin x$ 2) $-\sin(90 - x)$ 3) $\sin x$
4) $\sin(90 - x)$
- 8 The expression $\tan(180^\circ - y)$ is equivalent to
1) -1 2) $\frac{-\tan y}{1 + \tan y}$ 3) $-\tan y$ 4) $\frac{1 - \tan y}{1 + \tan y}$
- 9 The expression $\tan(180^\circ + x)$ is equivalent to
1) $\cot x$ 2) $\tan x$ 3) $-\cot x$ 4) $-\tan x$

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Answer Section

1 ANS: 4

$$\cos(\pi - x) = \cos \pi \cos x + \sin \pi \sin x = (-1)\cos x + 0 \sin x = -\cos x$$

REF: 010818b

2 ANS: 4 REF: 068127siii

3 ANS: 4

$$\sin(\theta + 90) = \sin \theta \cdot \cos 90 + \cos \theta \cdot \sin 90 = \sin \theta \cdot (0) + \cos \theta \cdot (1) = \cos \theta$$

REF: 061309a2

4 ANS: 1 REF: 068630siii

5 ANS: 1 REF: 019635siii

6 ANS: 4 REF: 060033siii

7 ANS: 1

$$\sin(180 + x) = (\sin 180)(\cos x) + (\cos 180)(\sin x) = 0 + (-\sin x) = -\sin x$$

REF: 011318a2

8 ANS: 3 REF: 069033siii

9 ANS: 2 REF: 089530siii