

A2.A.58: Cofunction Trigonometric Relationships: Know and apply the co-function and reciprocal relationships between trigonometric ratios

- 1 If angles A and B are complementary, then $\sec B$ equals
 - 1) $\csc(90^\circ - B)$
 - 2) $\csc(B - 90^\circ)$
 - 3) $\cos(B - 90^\circ)$
 - 4) $\cos(90^\circ - B)$
- 2 If $\angle A$ is acute and $\tan A = \frac{2}{3}$, then
 - 1) $\cot A = \frac{2}{3}$
 - 2) $\cot A = \frac{1}{3}$
 - 3) $\cot(90^\circ - A) = \frac{2}{3}$
 - 4) $\cot(90^\circ - A) = \frac{1}{3}$
- 3 If $\sin 6A = \cos 9A$, then $m\angle A$ is equal to
 - 1) 6
 - 2) 36
 - 3) 54
 - 4) $1\frac{1}{2}$
- 4 If $\sin(A - 30)^\circ = \cos 60^\circ$, the number of degrees in the measure of angle A is
 - 1) 30
 - 2) 60
 - 3) 90
 - 4) 120
- 5 If $\cos(x + 30^\circ) = \sin x$, a measure of angle x is
 - 1) 15°
 - 2) 30°
 - 3) 45°
 - 4) 60°
- 6 If $\cot(x - 10)^\circ = \tan(4x)^\circ$, a value of x is
 - 1) 10
 - 2) 20
 - 3) 30
 - 4) 40
- 7 If $\tan x = \cot(2x - 6)$, then $m\angle x$ is
 - 1) 28
 - 2) 32
 - 3) 45
 - 4) 84
- 8 If $\sin 2A = \cos 3A$, then $m\angle A$ is
 - 1) $1\frac{1}{2}$
 - 2) 5
 - 3) 18
 - 4) 36
- 9 If $\cos(2x - 1)^\circ = \sin(3x + 6)^\circ$, then the value of x is
 - 1) -7
 - 2) 17
 - 3) 35
 - 4) 71

- 10 If $\sin(x + 20^\circ) = \cos x$, the value of x is
 - 1) 35°
 - 2) 45°
 - 3) 55°
 - 4) 70°
- 11 If $\sin(x - 3)^\circ = \cos(2x + 6)^\circ$, then the value of x is
 - 1) -9
 - 2) 26
 - 3) 29
 - 4) 64
- 12 If $\tan(x + 20) = \cot x$, a value of x is
 - 1) 35
 - 2) 45
 - 3) 55
 - 4) 70
- 13 Which is a value of x if $\sin 60^\circ = \cos(x + 10)^\circ$?
 - 1) 10°
 - 2) 20°
 - 3) 50°
 - 4) 60°
- 14 Which value of x satisfies the equation $\sin(3x + 5)^\circ = \cos(4x + 1)^\circ$?
 - 1) 30
 - 2) 24
 - 3) 12
 - 4) 4
- 15 If x is a positive acute angle and $\sin x = \cos(x + 20^\circ)$, find the value of x .
- 16 If $3x$ is the measure of a positive acute angle and $\cos 3x = \sin 60^\circ$, find the value of x .
- 17 If $\cos 72^\circ = \sin x$, find the number of degrees in the measure of acute angle x .
- 18 If $\cos(2x - 25)^\circ = \sin 55^\circ$, find the value of x .
- 19 If $\sin(2x + 20)^\circ = \cos 40^\circ$, find x .
- 20 If $\sec(a + 15)^\circ = \csc(2a)^\circ$, find the smallest positive value of a , in degrees.
- 21 Find the value of acute angle A if $\frac{\sin A}{\cos 50^\circ} = 1$.

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Answer Section

1 ANS: 3

Cofunctions secant and cosecant are complementary

REF: 011625a2

2 ANS: 3

Cofunctions tangent and cotangent are complementary

REF: 061014a2

3 ANS: 1

$6A + 9A = 90$. (3), or $A = 54$, is also a correct response.

$$15A = 90$$

$$A = 6$$

REF: 010320b

4 ANS: 2

REF: 068025siii

5 ANS: 2

REF: 088622siii

6 ANS: 2

REF: 089328siii

7 ANS: 2

REF: 088932siii

8 ANS: 3

REF: 069621siii

9 ANS: 2

REF: 089633siii

10 ANS: 1

REF: 019729siii

11 ANS: 3

REF: 069825siii

12 ANS: 1

REF: 080118siii

13 ANS: 2

REF: 068717siii

14 ANS: 3

REF: 019428siii

15 ANS:

35°

REF: 088415siii

16 ANS:

10°

REF: 010404siii

17 ANS:

18

REF: 089704siii

18 ANS:

30

REF: 069912siii

19 ANS:
15

REF: 060310siii

20 ANS:
 $a + 15 + 2a = 90$
 $3a + 15 = 90$
 $3a = 75$
 $a = 25$

REF: 011330a2

21 ANS:
 40°

REF: 018712siii