

Worksheet after-----Quiz 5.3-5.4

Find the exact value by using a sum or difference identity.

1) $\tan 105^\circ$

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

2) $\sin \frac{11\pi}{12}$

2) $\frac{\sqrt{6} - \sqrt{2}}{4}$

3) $\cos 165^\circ$

3) $\frac{-2 - \sqrt{6}}{4}$

Use trigonometric identities to find the exact value.

4) $\sin 25^\circ \cos 35^\circ + \cos 25^\circ \sin 35^\circ$

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

Write in terms of the cofunction of a complementary angle.

5) $\sin 24^\circ$

5) $\cos 66^\circ$

6) $\cot \frac{13\pi}{14}$

6) $\tan \frac{-3\pi}{7}$

Use identities to fill in the blank with the appropriate trigonometric function name.

7) _____ $64^\circ = \cot 26^\circ$

7) \tan

8) $\csc 20^\circ = \frac{1}{\text{_____} 70^\circ}$

8) \cos

Use the cofunction identities to find an angle θ that makes the statement true.

9) $\sin \theta = \cos (4\theta + 60^\circ)$

9) $\theta = 6^\circ$

10) $\cot (2\theta - 20^\circ) = \tan (\theta - 10^\circ)$

10) $\theta = 40^\circ$

Find the exact value of the expression using the provided information.

11) Find $\cos(s - t)$ given that $\cos s = -\frac{5}{13}$, with s in quadrant II, and $\sin t = \frac{15}{17}$, with t in quadrant II.

11) $\frac{220}{281}$

Tell whether the statement is true or false.

12) $\cos 83^\circ = \cos 62^\circ \cos 21^\circ - \sin 62^\circ \sin 21^\circ$

12) A

A) True

B) False

Use trigonometric identities to find the exact value.

13) $\frac{\tan 5^\circ + \tan 25^\circ}{1 - \tan 5^\circ \tan 25^\circ}$

13) $\frac{\sqrt{3}}{3}$

Using a sum or difference identity, write the following as an expression involving functions of x.

14) $\sin\left(x - \frac{\pi}{2}\right)$

14) $-\cos x$

15) $\sin(360^\circ + x)$

15) $\sin x$

16) $\tan(30^\circ + x)$

16) $\frac{\sqrt{3} - 3 + \tan x}{3 - \sqrt{3} + \tan x}$

Find the exact value of the expression using the provided information.

17) Find $\cos(s + t)$ given that $\cos s = \frac{1}{3}$, with s in quadrant I, and $\sin t = -\frac{1}{2}$, with t in quadrant IV.

17) $\frac{\sqrt{3} + 2\sqrt{2}}{6}$

18) Find $\tan(s + t)$ given that $\sin s = \frac{1}{4}$, with s in quadrant II, and $\sin t = -\frac{1}{2}$, with t in quadrant IV.

18) $\frac{4\sqrt{3} + \sqrt{15}}{-11}$

or

Use identities to write each expression as a function of θ .

19) $\cos(\theta - \pi)$

19) $-\cos \theta$

Verify that the equation is an identity.

20) $\cos(x + 30^\circ) = \frac{\sqrt{3}}{2} \cos x - \frac{1}{2} \sin x$

20) _____

① $\cos x \cos 30 - \sin x \sin 30$ ④ Angle Sum Id

② $\cos x \frac{\sqrt{3}}{2} - \sin x \frac{1}{2}$ ⑤ substitute
③ $\frac{\sqrt{3}}{2} \cos x - \frac{1}{2} \sin x$ ③ commutativity

21) $\sin(\alpha - \beta) \cos(\alpha + \beta) = \sin \alpha \cos \alpha - \sin \beta \cos \beta$

21) _____

① $(\sin \alpha \cos \beta - \cos \alpha \sin \beta)(\cos \alpha \cos \beta - \sin \alpha \sin \beta)$

② $\cos \alpha \sin \alpha \cos^2 \beta - \sin^2 \alpha \cos \beta \sin \beta - \cos^2 \alpha \cos \beta \sin \beta + \cos \alpha \sin \alpha \sin^2 \beta$

③ $\cos \alpha \sin \alpha (\cos^2 \beta + \sin^2 \beta) - \cos \beta \sin \beta (\sin^2 \alpha + \cos^2 \alpha)$

④ $(\cos \alpha \sin \alpha - \cos \beta \sin \beta)(\sin^2 \alpha + \cos^2 \alpha)$
⑤ $(\sin \alpha \cos \alpha - \sin \beta \cos \beta) = \sin \alpha \cos \alpha - \sin \beta \cos \beta$