Trig Review Ch. 7 (if time)

Quiz 7.7
Test Ch. 7 Tues.

For Thurs. SGR o

Solve each equation for $0° \le x < 360°$.

34. $(\tan x + 1)^2 = \sec x$

$$\left(\frac{\sin x}{\cos x} - \frac{1}{\cos x}\right)^2 = -1$$

$$\frac{\sin x}{\cos} - \frac{1}{\cos x} + \frac{\cos x}{\cos x} = 0$$

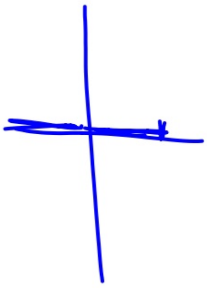
$$c^2 \quad \frac{\sin^2 x - 2\sin x + 1}{\cos^2 x} = 1 \cdot c^2$$

$$\frac{\sin x - 1 + \cos x}{\cos x}$$

$$\sin^2 - 2\sin x + 1 = \cos^2 x$$

$$\tan^2 x + 2\tan x + 1 = \sec^2 x$$

$$\tan^2 x + 2\tan x + 1 = \tan^2 x + 1$$



$$\frac{2\tan x}{2} = \frac{0}{2}$$

$$\tan x = 0$$

0, 180°

Solve each equation for all real values of x.

37. $\sin x \tan x - \frac{\sqrt{2}}{2} \tan x = 0$

$\tan x \left(\sin x - \frac{\sqrt{2}}{2}\right) = 0$

$\tan x = 0$ $\quad$ $\sin x = \frac{\sqrt{2}}{2}$

$0, \pi$ $\quad$ $\frac{\pi}{4}$ $\quad$ $\frac{3\pi}{4}$ $\quad$ $+2\pi n$ (integer)

Find the distance between the point with the given coordinates and the line with the given equation.

48. $(5, 6), 2x - 3y + 2 = 0$

Find the distance between the parallel lines with the given equations.

52. $y = \frac{x}{3} - 6$

$y = \frac{x}{3} + 2$

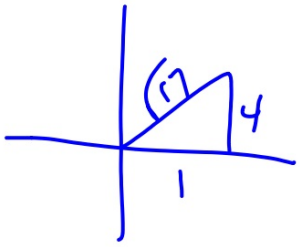
(0, -6)

Use the given information to determine the trigonometric value. In each case, $0° < \theta < 90°$.

11. If $\sin\theta = \frac{1}{2}$, find $\csc\theta$. $= \frac{2}{1}$

12. If $\tan\theta = 4$, find $\sec\theta$. $= \sqrt{17}$

13. If $\csc\theta = \frac{5}{3}$, find $\cos\theta$.



Verify that each equation is an identity.

16. $\cos^2 x + \tan^2 x \cos^2 x = 1$

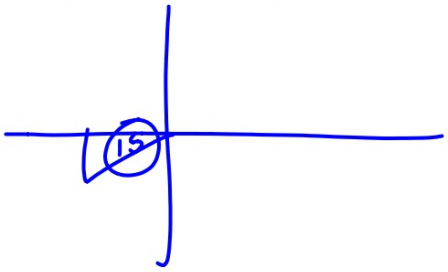
$\cos^2 x + \sin^2 x = 1$

17. $\dfrac{1 - \cos\theta}{1 + \cos\theta} = (\csc\theta - \cot\theta)^2$

Use sum or difference identities to find the exact value of each trigonometric function.

20. cos 195°

21. cos 15°



Find each exact value if $0 < x < \frac{\pi}{2}$ and $0 < y < \frac{\pi}{2}$.

24. $\cos(x - y)$ if $\sin x = \frac{7}{25}$ and $\cos y = \frac{2}{3}$

REVIEW EXERCISES

Use a half-angle identity to find the exact value of each function.

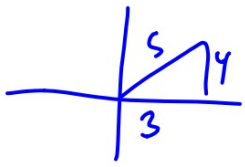
26. $\cos 75°$

27. $\sin \frac{7\pi}{8}$

$75 = \frac{T}{\sqrt{\quad 150}}$

If θ is an angle in the first quadrant and $\cos\theta = \frac{3}{5}$, find the exact value of each function.

30. $\sin 2\theta$ **31.** $\cos 2\theta$



$\sin(4\theta) = \sin(2\theta + 2\theta)$ (A, B)

$= 2\sin 2\theta \cdot \cos 2\theta$

$= 2\left((2\sin\theta\cos\theta)(\cos^2\theta - \sin^2\theta)\right)$

$= 2\left(\frac{8}{5}\cdot\frac{3}{5}\cdot\left(\frac{3}{5}\cdot\frac{3}{5} - \frac{4}{5}\cdot\frac{4}{5}\right)\right)$

$2\cdot\frac{8}{5}\cdot\frac{3}{5}\left(\frac{9}{25} - \frac{16}{25}\right)$

$2\frac{8}{5}\cdot\frac{3}{5}\cdot\frac{-7}{25} =$