Go over 5.1-5.3 Quiz

Homework questions

Activity

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GO COUGARS!

Homework Questions

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In Exercises 1 and 2, use the figure to find the exact value of each trigonometric function.

1.

(a) $\sin\theta$ (b) $\cos\theta$
(c) $\cos 2\theta$ (d) $\sin 2\theta$
(e) $\tan 2\theta$ (f) $\sec 2\theta$
(g) $\csc 2\theta$ (h) $\cot 2\theta$

In Exercises 3–12, use a graphing utility to approximate the solutions of the equation in the interval $[0, 2\pi)$. If possible, find the exact solutions algebraically.

3. $\sin 2x - \sin x = 0$
4. $\sin 2x + \cos x = 0$
5. $4 \sin x \cos x = 1$
6. $\sin 2x \sin x = \cos x$
7. $\cos 2x - \cos x = 0$
8. $\tan 2x - \cot x = 0$
9. $\sin 4x = -2 \sin 2x$
10. $(\sin 2x + \cos 2x)^2 = 1$
11. $\cos 2x + \sin x = 0$
12. $\tan 2x - 2 \cos x = 0$

In Exercises 13–18, find the exact values of $\sin 2u$, $\cos 2u$, and $\tan 2u$ using the double-angle formulas.

13. $\sin u = \frac{3}{5}, \quad 0 < u < \pi/2$
14. $\cos u = -\frac{2}{7}, \quad \pi/2 < u < \pi$
15. $\tan u = \frac{1}{2}, \quad \pi < u < 3\pi/2$
16. $\cot u = -6, \quad 3\pi/2 < u < 2\pi$
17. $\sec u = -\frac{5}{3}, \quad \pi/2 < u < \pi$
18. $\csc u = 3, \quad \pi/2 < u < \pi$

In Exercises 19–22, use a double-angle formula to rewrite the expression. Use a graphing utility to graph both expressions to verify that both forms are the same.

19. $8 \sin x \cos x$

In Exercises 23–36, rewrite the expression in terms of the first power of the cosine. Use a graphing utility to graph both expressions to verify that both forms are the same.

23. $\cos^4 x$
24. $\sin^4 x$
25. $\sin^2 x \cos^2 x$
26. $\cos^6 x$
27. $\sin^2 x \cos^4 x$
28. $\sin^4 x \cos^2 x$
29. $\sin^2 2x$
30. $\cos^2 2x$
31. $\cos^2 \frac{x}{2}$
32. $\sin^2 \frac{x}{2}$
33. $\sin^2 2x \cos^2 2x$
34. $\sin^2 \frac{x}{2} \cos^2 \frac{x}{2}$
35. $\sin^4 \frac{x}{2}$
36. $\cos^4 \frac{x}{2}$

Feb 2-9:51 PM

5.4 - 5.5 Activity

1. You will be put into groups of 3
2. Complete the problem on the SmartBoard in your group, make sure everyone in your group agrees on the answer

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1

Find

$\sin 165°$

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

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2

Use $\cos a = \frac{24}{25}$ and $\sin b = -\frac{8}{17}$ in Quadrant 4 to find $\cos(a - b)$

$\longrightarrow \frac{416}{425}$

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3

Find $\cos\frac{\pi}{12}$

$\longrightarrow \frac{\sqrt{3}+1}{2\sqrt{2}}$

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4

Using $\tan x = -\frac{4}{9}$ and x is in quad II find $\cos 2x$

$\longrightarrow \frac{65}{97}$

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5

Verify the following identity.

$\tan x = \frac{\sin 2x}{1 + \cos 2x}$

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6

Solve.

$\cos 2x = -2\cos^2 x$

$\longrightarrow x = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

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7

Verify.

$\cos(\frac{3\pi}{2} - x) = -\cos x$

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8

Solve.

$2\cos 2x - \cos x - 1 = 0$

$\longrightarrow x = \cos^{-1}\left(\frac{3}{4}\right), 0$

$2.42, 3.86$

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Homework

pg 384 4, 16, 19, 24, 35,
36-42 even, 51, 53, 71

pg 394 5, 6, 14-18 even

Aug 29-6:38 AM