5.3C WS Key

Thursday, December 6, 2018 8:05 AM

PreCalculus Power Reducing and Half Angle Practice 5.3C WS

Name _____ Date _____

Use a power reducing formula in order to rewrite each expression as a trig expression that does not contain powers of trig functions greater than 1.

1) $2\sin^4 A$

$$\boxed{\frac{3}{4} - \cos 2A + \frac{1}{4}\cos 4A}$$

2) $12\sin^2 A\cos^2 A$

$$\boxed{\frac{3}{2} - \frac{3}{2}\cos 4A}$$

3) $14\cos^4 x$

$$\boxed{\frac{21}{4} + 7\cos 2x + \frac{7}{4}\cos 4x}$$

4) $160\sin^2 x$

$$\boxed{80 - 80\cos 2x}$$

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Given the quadrant in which the angle A lies, state where the half angle would lie.

5) A is in II

I

6) A is in III

II

7) A is in IV

II

Use a half angle formula to find the EXACT VALUE of each.

8) $\sin\frac{7\pi}{12}$

$$\boxed{\frac{\sqrt{2+\sqrt{3}}}{2}}$$

9) $\cos(-\frac{7\pi}{8})$

$$\boxed{-\frac{\sqrt{2+\sqrt{2}}}{2}}$$

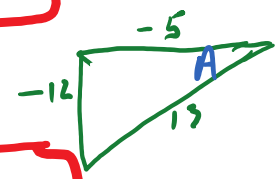
10) sin(-157.5°)

$$\boxed{-\frac{\sqrt{2-\sqrt{2}}}{2}}$$

11) $\tan(\frac{3\pi}{8})$

$$\boxed{\sqrt{2}+1}$$

Given sinA = -12/13 and A is in Quad III, find each ratio.



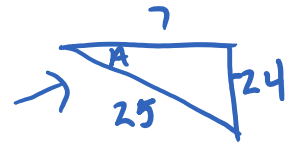
12) cos(A/2)

$$\boxed{\frac{-2\sqrt{13}}{13}}$$

13) sin(A/2)

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

14) Given cotA = -7/24 and A is in IV, find tan(A/2).



$$\frac{1-\cos x}{\sin x} = \frac{1-\frac{7}{25}}{-\frac{24}{25}} \cdot \frac{25}{25}$$

$$= \frac{25-7}{-24} = \frac{18}{-24} = \frac{-3}{4}$$

$$\boxed{\frac{-3}{4}}$$