Precalculus

Name Schade ID: 1

sum/difference/double/half

Find the exact value of each. Simplest form - remember to rationalize!

1) $\sin 15$ $\frac{\sqrt{6}-\sqrt{2}}{4}$

2) $\tan 165$ $\sqrt{3}-2$

3) $\tan -75$ $-2-\sqrt{3}$

4) $\cos \frac{13\pi}{12}$ $\frac{-\sqrt{6}-\sqrt{2}}{4}$

5) $\sin \frac{7\pi}{12}$ $\frac{\sqrt{6}+\sqrt{2}}{4}$

6) $\cos -\frac{\pi}{12}$ $\frac{\sqrt{6}+\sqrt{2}}{4}$

7) $\tan -15$ $\sqrt{3}-2$

8) $\tan \frac{13\pi}{12}$ $2-\sqrt{3}$

9) $\sin \theta = \frac{12}{13}$ where $90 \le \theta < 180$ $\frac{2\sqrt{13}}{13}$

Find $\cos \frac{\theta}{2}$

10) $\tan \theta = -\frac{7\sqrt{15}}{15}$ where $\frac{3\pi}{2} \le \theta < 2\pi$ $\frac{7\sqrt{15}}{17}$

Find $\tan 2\theta$

Use the half-angle identities to find the exact value of each. Rationalize!

11) $\tan \frac{7\pi}{12}$ $-2-\sqrt{3}$

12) $\cos 105°$ $-\frac{\sqrt{2-\sqrt{3}}}{2}$

13) $\sin 15°$ $\frac{\sqrt{2-\sqrt{3}}}{2}$

14) $\tan 157.5°$ $1-\sqrt{2}$

15) $\sin \frac{23\pi}{12}$ $-\frac{\sqrt{2-\sqrt{3}}}{2}$

16) $\tan 67.5°$ $1+\sqrt{2}$

17) $\cos 345°$ $\frac{\sqrt{2+\sqrt{3}}}{2}$

18) $\sin \frac{13\pi}{12}$ $-\frac{\sqrt{2-\sqrt{3}}}{2}$

Find the exact value of each.

19) $\tan \theta = \frac{\sqrt{3}}{12}$ where $0 \le \theta < \frac{\pi}{2}$ $\frac{47}{49}$

Find $\cos 2\theta$

20) $\sin \theta = -\frac{4}{5}$ where $270 \le \theta < 360$ $-\frac{24}{25}$

Find $\sin 2\theta$