Algebra II

Trigonometry Supplement 2

Practice part 1: Find each of the following in simplest radical form. Do not use a calculator.

1) sin 90°

2) ~~cos 180°~~

3) sin 60°

4) tan 30°

5) cos 300°

6) tan 120°

7) tan 225°

8) cos 120°

9) tan 210°

10) cos 150°

11) ~~cos 270°~~

12) ~~tan 90°~~

13) ~~sin 45°~~

14) cos 330°

15) ~~tan 180°~~

16) cos 225°

17) sin 135°

18) sin 330°

19) cos 330°

20) tan 330°

Practice part 3: These problems are similar to the previous ones except that the angles are measured in radians. Again, do not use a calculator and give exact values for answers.

1) $\sin \frac{\pi}{2}$

2) ~~cos π~~

3) $\sin \frac{\pi}{3}$

4) $\tan \frac{\pi}{6}$

5) $\cos \frac{5\pi}{6}$

6) $\tan \frac{3\pi}{4}$

7) ~~tan~~ $\frac{3\pi}{2}$

8) ~~cos 2π~~

9) $\tan \frac{11\pi}{6}$

10) $\cos \frac{2\pi}{3}$

11) $\cos \frac{5\pi}{4}$

12) $\tan \frac{3\pi}{4}$

13) $\sin \frac{7\pi}{6}$

14) $\cos \frac{11\pi}{6}$

15) $\tan \frac{7\pi}{4}$

16) ~~cos~~ $\frac{3\pi}{2}$

17) $\sin \frac{5\pi}{6}$

18) $\sin \frac{7\pi}{4}$

19) $\cos \frac{5\pi}{6}$

20) ~~tan π~~

Practice part 5: Given the ratio, find the angle. Suppose that we wish to find all angles between 0 and 2π for which $\sin \theta = \frac{1}{2}$. Follow the following steps.

Step 1: Find the reference angle based on the special triangle.
Step 2: Determine the quadrants in which the angle falls based on the sign of the ratio.
Step 3: Place the reference angle in each quadrant.

1) $\sin \theta = \frac{1}{2}$ so θ = ___ or ___

2) $\sin \theta = -\frac{1}{2}$ so θ = ___ or ___

3) $\sin \theta = \frac{\sqrt{3}}{2}$ so θ = ___ or ___

4) $\sin \theta = -\frac{\sqrt{2}}{2}$ so θ = ___ or ___

5) $\cos \theta = \frac{1}{2}$ so θ = ___ or ___

6) $\cos \theta = -\frac{\sqrt{3}}{2}$ so θ = ___ or ___

7) $\tan \theta = \frac{\sqrt{3}}{3}$ so θ = ___ or ___

8) $\tan \theta = -1$ so θ = ___ or ___