GIVE **EXACT ANSWERS** (NO DECIMALS) FOR ALL PROBLEMS **EXCEPT 8 & 9**
SHOW ALL WORK FOR FULL CREDIT—PLEASE CIRCLE YOUR FINAL ANSWER
FRACTIONS INVOLVING SQUARE ROOTS DO NOT HAVE TO BE RATIONALIZED

1. Give two positive and two negative angles that are coterminal with $\theta = 100°$.

2. Find the reference angle for $\theta = 95°$.

3. Find the reference angle for $\theta = 710°$.

4. If $\csc\theta$ is positive and $\cot\theta$ is negative, then θ lies in which quadrant?

5. True or False:

$$\text{If } \cos\theta = \frac{1}{2}, \text{ then } \sin\theta = \frac{\sqrt{3}}{2}$$

6. True or False: If $\tan\theta = 1$, then θ is a quadrantal angle.

7. Find the exact value of the following.

   (a) $\tan 1050° =$

   (b) $\cos(-495°) =$

   (c) $\sin\left(\frac{17\pi}{3}\right) =$

Use your calculator for problems 8–9.

8. Use your calculator to find the following accurate to **four** decimal places.

   (a) $\csc\left(\frac{11\pi}{45}\right) =$

   (b) $\cot 32.53° =$

   (c) $\sec 22.67° =$

9. Solve for θ, $0° \leq \theta < 360°$. Give answer(s) to nearest **whole degree**.

   (a) $\cos\theta = 0.89875$

   (b) $\tan\theta = -4.705$

   (c) $\sin\theta = -0.95631$

10. Find all angles, $0° \leq \theta < 360°$, for which

    (a) $\cos\theta = -\frac{1}{\sqrt{2}}$

    (b) $\sin\theta = \frac{\sqrt{3}}{2}$

    (c) $\tan\theta = -\frac{1}{\sqrt{3}}$

    (d) $\csc\theta = 2$

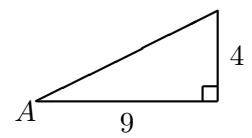
    (e) $\cos\theta = \frac{1}{2}$

    (f) $\tan\theta = 0$

11. The point $(-1, 6)$ lies on the terminal side of an angle θ in standard position. Find the exact value of the six trigonometric functions of θ.

12. If $\sin\theta = -\dfrac{3}{8}$ and $\cos\theta$ is positive, find $\cos\theta$ and $\tan\theta$.

13. Find $\sin A, \cos A, \tan A$:



14. If $\tan\theta = \dfrac{1}{3}$, find $\sin\theta$ and $\cos\theta$.

15. Find the exact value of the following. Be sure to simplify your answer.

(a) $\sqrt{\dfrac{1+\cos 60^\circ}{2}} =$

(b) $2\sin 270^\circ \cos 0^\circ + 7\tan 135^\circ - \sec 60^\circ =$

(c) $\cos 240^\circ \cos 30^\circ + \sin 240^\circ \sin 30^\circ =$

(d) $2\sin 120^\circ \sec 150^\circ - 4\csc 60^\circ \cos 210^\circ =$

(e) $\dfrac{2\sin 150^\circ \cos 30^\circ}{2\cos^2 30^\circ - 1} =$

(f) $\dfrac{\sec 45^\circ + \csc 135^\circ}{\sin^2 120^\circ + 2\cos^2 315^\circ} =$

(g) $\dfrac{2\tan 300^\circ}{1 - \tan^2 60^\circ} =$

(h) $\dfrac{\cos 330^\circ - \tan 120^\circ}{\sin 30^\circ \cos 240^\circ} =$

(i) $\dfrac{\sin 225^\circ + \tan 300^\circ}{\sin 135^\circ + \cos 315^\circ} =$

ANSWERS

1. $460°,\ 820°,\ -260°,\ -620°$

2. $\theta' = 85°$

3. $\theta' = 10°$

4. Quadrant II

5. False

6. False

7. (a) $-\dfrac{1}{\sqrt{3}}$

   (b) $-\dfrac{1}{\sqrt{2}}$

   (c) $-\dfrac{\sqrt{3}}{2}$

8. (a) 1.4396

   (b) 1.5679

   (c) 1.0837

9. (a) $\theta = 26°,\ 334°$

   (b) $\theta = 102°,\ 282°$

   (c) $\theta = 253°,\ 287°$

10. (a) $\theta = 135°,\ 225°$

    (b) $\theta = 60°,\ 120°$

    (c) $\theta = 150°,\ 330°$

    (d) $\theta = 30°,\ 150°$

    (e) $\theta = 60°,\ 300°$

    (f) $\theta = 0°,\ 180°$

11. $\sin\theta = \dfrac{6}{\sqrt{37}};\quad \cos\theta = \dfrac{-1}{\sqrt{37}};\quad \tan\theta = -6;$
    $\csc\theta = \dfrac{\sqrt{37}}{6};\quad \sec\theta = -\sqrt{37};\quad \cot\theta = \dfrac{-1}{6}$

12. $\sin\theta = -\dfrac{3}{8};\quad \cos\theta = \dfrac{\sqrt{55}}{8};\quad \tan\theta = \dfrac{-3}{\sqrt{55}}$

13. $\sin A = \dfrac{4}{\sqrt{97}};\quad \cos A = \dfrac{9}{\sqrt{97}};\quad \tan A = \dfrac{4}{9}$

14. $\sin\theta = \dfrac{1}{\sqrt{10}};\ \cos\theta = \dfrac{3}{\sqrt{10}};\ \tan\theta = \dfrac{1}{3}$

    OR

    $\sin\theta = \dfrac{-1}{\sqrt{10}};\ \cos\theta = \dfrac{-3}{\sqrt{10}};\ \tan\theta = \dfrac{1}{3}$

15. (a) $\dfrac{\sqrt{3}}{2}$

    (b) -11

    (c) $-\dfrac{\sqrt{3}}{2}$

    (d) 2

    (e) $\sqrt{3}$

    (f) $\dfrac{8\sqrt{2}}{7}$

    (g) $\sqrt{3}$

    (h) $-6\sqrt{3}$

    (i) $\dfrac{-1-\sqrt{6}}{2}$