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 $\theta = 220°$.

2. Find the reference angle for $\theta = 250°$.

3. If $\theta$ is a quadrantal angle, then list all of the possible values of $\cos\theta$.

4. True or False: If $\tan\theta = 0$, then $\cos\theta = 1$

5. True or False: $\sin 30° + \sin 60° = \sin 90°$

6. The point $(-5, -3)$ lies on the terminal side of an angle $\theta$ in standard position. Find the exact value of the six trigonometric functions of $\theta$.

7. Find the exact value of the following.

   (a) $\sin 1020° =$

   (b) $\cos(-585°) =$

   (c) $\tan\left(\dfrac{17\pi}{6}\right) =$

## Use your calculator for problems 8–9

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

   (a) $\csc(-52.36°) =$

   (b) $\cot 15.48° =$

   (c) $\sec 122.73° =$

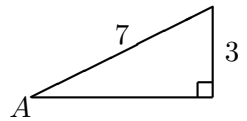
   (d) $\sin\left(\dfrac{13\pi}{60}\right) =$

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

   (a) $\sin\theta = 0.3091$

   (b) $\cos\theta = -0.6820$

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




11. If $\cos\theta = -\dfrac{5}{6}$, find $\sin\theta$ and $\tan\theta$.

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

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

(b) $\tan\theta = \sqrt{3}$

(c) $\sin\theta = 0$

(d) $\sec\theta = \sqrt{2}$

(e) $\tan\theta = -1$

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

13. Find the exact value of the following. Be sure to SIMPLIFY your answer.

(a) $\sin 210° \cos 45° + \cos 210° \sin 45° =$

(b) $\sin^2 270° + 3\tan 180° - 5\cos 180° =$

(c) $\sin^2 135° + 3\cos 120° + \tan 315° =$

(d) $\dfrac{\tan 60^\circ + \tan 150^\circ}{1 - \tan 60^\circ \tan 150^\circ} =$

(e) $\dfrac{1 + \cos 240^\circ}{1 - \cos 240^\circ} =$

(f) $3 \sec 300^\circ \tan 135^\circ + \csc^2 60^\circ =$

(g) $\dfrac{\csc 60^\circ + \sec 30^\circ}{\sec 60^\circ} =$

# ANSWERS

1. $580°,\ 940°,\ -140°,\ -500°$

2. $\theta' = 70°$

3. $1,\ 0,\ -1$

4. False

5. False

6. $\sin\theta = \dfrac{-3}{\sqrt{34}};\quad \cos\theta = \dfrac{-5}{\sqrt{34}};\quad \tan\theta = \dfrac{3}{5};$

   $\csc\theta = \dfrac{\sqrt{34}}{-3};\quad \sec\theta = \dfrac{\sqrt{34}}{-5};\quad \cot\theta = \dfrac{5}{3}$

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

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

   (c) $-\dfrac{1}{\sqrt{3}}$

8. (a) $-1.2628$

   (b) $3.6108$

   (c) $-1.8495$

   (d) $0.6293$

9. (a) $\theta = 18°,\ 162°$

   (b) $\theta = 133°,\ 227°$

10. $\sin A = \dfrac{3}{7};\quad \cos A = \dfrac{2\sqrt{10}}{7};\quad \tan A = \dfrac{3}{2\sqrt{10}}$

11. $\sin\theta = \sqrt{11}/6;\ \cos\theta = -5/6;\ \tan\theta = -\sqrt{11}/5$

    OR

    $\sin\theta = -\sqrt{11}/6;\ \cos\theta = -5/6;\ \tan\theta = \sqrt{11}/5$

12. (a) $\theta = 210°,\ 330°$

    (b) $\theta = 60°,\ 240°$

    (c) $\theta = 0°,\ 180°$

    (d) $\theta = 45°,\ 315°$

    (e) $\theta = 135°,\ 315°$

    (f) $\theta = 120°,\ 240°$

13. (a) $\dfrac{-1-\sqrt{3}}{2\sqrt{2}}$

    (b) $6$

    (c) $-2$

    (d) $\dfrac{1}{\sqrt{3}}$

    (e) $\dfrac{1}{3}$

    (f) $-\dfrac{14}{3}$

    (g) $\dfrac{2}{\sqrt{3}}$