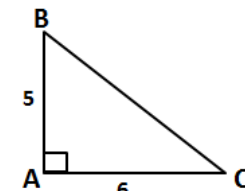
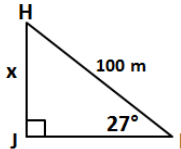
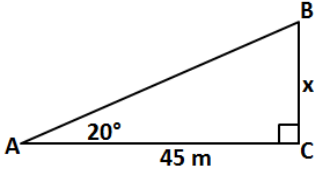
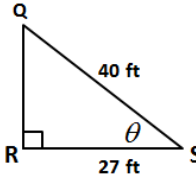
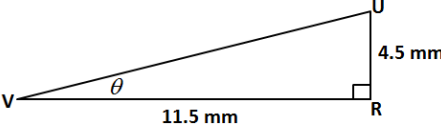


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| <p>1. Given $\theta = 400^\circ$</p> <p>A. In what quadrant does the terminal side fall?</p> <p>B. Convert θ to radian measure.</p> <p>C. Find the reference angle.</p> | <p>2. Given $\triangle ABC$, find the following:</p> <p>a. $\cos C =$ _____</p> <p>b. $\csc C =$ _____</p> <p>c. $\cot C =$ _____</p>  |
| <p>3. Evaluate the following and give exact answers with rationalized denominators as needed. No Calculators.</p> <p>a. $\sin 45^\circ =$ _____ b. $\cos 60^\circ =$ _____ c. $\tan 30^\circ =$ _____</p> <p>d. $\sin 270^\circ =$ _____ e. $\cos 0^\circ =$ _____ f. $\csc 45^\circ =$ _____</p> <p>g. $\tan 45^\circ =$ _____ h. $\sec 30^\circ =$ _____ i. $\tan \pi =$ _____</p> <p>j. $\sin\left(\frac{\pi}{3}\right) =$ _____ k. $\tan\left(\frac{\pi}{4}\right) =$ _____ l. $\cos\left(\frac{\pi}{4}\right) =$ _____</p> | |
| <p>4. Find the values of θ in degrees $0^\circ \leq \theta \leq 360^\circ$ and radians $0 \leq \theta \leq 2\pi$ without the aid of a calculator. Find exact values for each. You will have four answers for each.</p> <p>a. $\tan \theta = -\sqrt{3}$</p> <p>b. $\csc \theta = \sqrt{2}$</p> | <p>5. Sketch the angle in standard position. $\theta = 3.14$</p> |
| <p>6. Determine the quadrant in which each angle lies and sketch each angle in standard position.</p> <p>a. $\frac{3\pi}{4}$ b. $\frac{24\pi}{7}$ c. 4.25 d. 840° e. -720°</p> | |
| <p>7. Determine two coterminal angles (one positive and one negative) for each angle. Your units should match the given angle.</p> <p>a. $\frac{5\pi}{4}$</p> <p>b. -540°</p> | <p>8. Sketch a right triangle corresponding to the trigonometric function of the acute angle θ. Use the Pythagorean theorem to determine the third side and then find the other five trigonometric functions of θ.</p> <p style="text-align: center;">$\sec \theta = 6$ Constraint: Quadrant 1</p> |
| <p>9. Evaluate without using a calculator. (Exact answers, no decimals, rationalize denominator as needed)</p> <p>a. $\sin 675^\circ =$ _____ b. $\cos -930^\circ =$ _____</p> <p>c. $\tan 420^\circ =$ _____ d. $\sin\left(-\frac{11\pi}{3}\right) =$ _____</p> <p>e. $\cos\left(\frac{15\pi}{4}\right) =$ _____ f. $\tan\left(-\frac{23\pi}{6}\right) =$ _____</p> | <p>10. Find the values of θ in degrees $0^\circ < \theta < 90^\circ$ and radians $0^\circ < \theta < \frac{\pi}{2}$ by using a calculator.</p> <p>a. $\sin \theta = .2588$</p> <p>b. $\tan \theta = .7002$</p> <p>c. $\cos \theta = .0872$</p> |

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|--|--|------------|------------------------------|------------------------------|---|----------------|------------|-------------------|-------------------|
| <p>11. Find the missing side.</p> <p>a. </p> <p>b. </p> | <p>12. Find the missing angle.</p> <p>a. </p> <p>b. </p> | | | | | | | | |
| <p>13. The angle of elevation of the top of a building from a point 100 feet away level ground is 60°. Determine the height of the building.</p> | <p>14. The angle of depression of a buoy from a point on a lighthouse 98 feet above the water surface is 9°. Find the distance from the lighthouse to the buoy.</p> | | | | | | | | |
| <p>15. Evaluate (if possible) the sine, cosine, and tangent of the real number.</p> <p>a. $\frac{4\pi}{3}$ b. $-\frac{5\pi}{3}$ c. $\sin(-4\pi)$ d. $\cos(-\frac{7\pi}{2})$ e. $\cot(\frac{30\pi}{6})$</p> | | | | | | | | | |
| <p>16. Use a calculator to evaluate the expression. Round to four decimal places.</p> <p>a. $\sin\left(\frac{\sqrt{2}}{2}\right)$ b. $\csc 5$ c. $\sin 56^\circ$</p> | <p>17. Let $(9, 12)$ be a point on the terminal side of θ. Determine the exact values of \cos, \csc, and \cot.</p> | | | | | | | | |
| <p>18. Let $(4, 6)$ be a point on the terminal side of θ. Determine the exact values of \sin, \tan, \sec.</p> | <p>19. State the quadrant in which θ lies.</p> <p>a. $\sin \theta > 0$ and $\cot \theta < 0$</p> <p>b. $\sec \theta < 0$ and $\csc \theta > 0$</p> <p>c. $\tan \theta < 0$ and $\sin \theta < 0$</p> | | | | | | | | |
| <p>20. Find the values of \sin, \sec, \cot of θ.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Function value</td> <td style="width: 50%;">constraint</td> </tr> <tr> <td>$\tan \theta = -\frac{4}{3}$</td> <td>$\cos \theta > 0$</td> </tr> </table> | Function value | constraint | $\tan \theta = -\frac{4}{3}$ | $\cos \theta > 0$ | <p>21. Find the values of \cos, \csc, \cot of θ.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Function value</td> <td style="width: 50%;">constraint</td> </tr> <tr> <td>$\sec \theta = 5$</td> <td>$\sin \theta < 0$</td> </tr> </table> | Function value | constraint | $\sec \theta = 5$ | $\sin \theta < 0$ |
| Function value | constraint | | | | | | | | |
| $\tan \theta = -\frac{4}{3}$ | $\cos \theta > 0$ | | | | | | | | |
| Function value | constraint | | | | | | | | |
| $\sec \theta = 5$ | $\sin \theta < 0$ | | | | | | | | |
| <p>22. Evaluate the trigonometric function of the quadrant angle. (No decimal in answer, rationalized if necessary)</p> <p>a. $\cos(\pi)$ b. $\cot\left(\frac{\pi}{2}\right)$</p> <p>c. $\sec(2\pi)$ d. $\csc\left(\frac{3\pi}{2}\right)$</p> | <p>23. Evaluate the cosine and tangent of the angle. (No decimal in answer, rationalized if necessary)</p> <p>a. $\frac{14\pi}{4}$ b. $-\frac{29\pi}{3}$</p> | | | | | | | | |
| <p>24. Find two solutions of the equations. Give your answers in degrees $0^\circ \leq \theta \leq 360^\circ$ and radians $0^\circ \leq \theta \leq 2\pi$. You should have 4 answers per problem.</p> <p>a. $\sin \theta = -\frac{\sqrt{3}}{2}$ b. $\sec \theta = \frac{2\sqrt{3}}{3}$</p> | <p>25. Find the five remaining trigonometric values.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Function</td> <td style="width: 50%;">Constraint</td> </tr> <tr> <td>$\cos \theta = -\frac{5}{6}$</td> <td>$\sin \theta > 0$</td> </tr> </table> | Function | Constraint | $\cos \theta = -\frac{5}{6}$ | $\sin \theta > 0$ | | | | |
| Function | Constraint | | | | | | | | |
| $\cos \theta = -\frac{5}{6}$ | $\sin \theta > 0$ | | | | | | | | |
| <p>26. There is a point $M(x, y)$ located on the terminal side of an angle, $\theta = 140^\circ$. The distance from the origin $(0, 0)$ to point M is 20. What are the coordinates of point M? Round to 2 decimal places. (What is x and y?)</p> | <p>27. Let $(\sqrt{39}, -5)$ be a point on the terminal side of θ. Determine the exact values of \sin, \tan, and \sec.</p> | | | | | | | | |