

Chapter 1 Test Review

For problems 1 and 2, a) name the function and b) plot the graph for the given values of x.

1) $y = x^2 - 2$ for $x = -2, -1, 0, 1, 2$ 2) $y = \frac{x+3}{x-1}$ for $x = -2, -1, 0, 1, 2, 3, 4$

Sketch a reasonable graph and state whether the graph is periodic.

- 3) The length of time it takes to do trig homework depends on the difficulty of the homework.
 4) The number of people inside Disneyland depends on the time of day.
 5) As a child rides on a swing, his or her distance from the ground depends on time.

For problems 6 – 9, determine the coterminal angle θ_c and draw and mark the angle in standard position. Find the reference angle θ_{ref} and draw and mark the reference angle on your sketch.

6) 289° 7) -100° 8) 1020° 9) $516^\circ 22'$

- 10) Find the exact values of the six trig functions of an angle θ whose terminal side passes through $(-3, 6)$.
 11) Find the exact values of the six trig functions of an angle θ if θ terminates in Quadrant III and has $\sec \theta = -3$.
 12) Find (using unit circle side lengths) exact values of the six trigonometric functions of the angle 60° .
 13) Find (using unit circle side lengths) exact values of the six trigonometric functions of the angle 315° .

For problems 14 – 17, evaluate the given expression and leave the answer in simple radical form. Include a sketch for each angle and use x, y, r calculations to evaluate each expression.

14) $\cos 30^\circ \sin 120^\circ$ 15) $6 \cot 135^\circ$

16) $\cos^2 45^\circ$ 17) $\sec 300^\circ$

- 18) The tallest building in California is the U.S. Bank Tower in Los Angeles at 1,018 feet. Suppose that at a certain time of day, it casts a shadow of 522 feet on the ground. What is the angle of elevation of the sun at that time?
 19) You lean a 4.8 m long ladder against a building. It makes an angle of 27° with the building. How high up is the top of the ladder?
 20) A 1500 foot high radio tower is to be supported by guy wires running from the ground to the top of the tower. The wires must make an angle of $63^\circ 12'$ with the ground. Determine the length of each wire.

Find the decimal approximations to four significant digits.

21) $\cos 167.4^\circ$ 22) $\cot 248^\circ 17'$

Find the decimal approximations to a) two decimal places and b) the nearest minute.

23) $\sin^{-1}(0.3862)$ 24) $\sec^{-1}(3.738)$ 25) $\tan \theta = 0.9257$ $\theta = ?$