DMC Mock State Target 1 & 2

1. \_\_\_\_\_\_\_\_ Logan is constructing a scaled model of his town. The city's water tower is a cylinder with lateral surface area square meters and holds liters of water. Logan's miniature water tower holds liters. What is the lateral surface area, in square meters, of his water tower?
2. \_\_\_\_\_\_\_\_ Triangle has vertices , and . What is the area of triangle ?

DMC Mock State Target 3 & 4

1. \_\_\_\_\_\_\_\_ The sum of a list of seven positive integers is . The mean, median and mode are consecutive integers, in some order. What is the largest possible integer in the list?
2. \_\_\_\_\_\_\_\_ Rays and intersect circle at and , respectively. Segment is a diameter of circle O and . If the measure of is 24 degrees, what is the degree measure of ?



DMC Mock State Target 5 & 6

1. \_\_\_\_\_\_\_\_ Let x, y and z be consecutive integers such that x < y < z. If (x + y)(x + z) = 9900, what is the value of x?
2. \_\_\_\_\_\_\_\_ When Mandi shoots free throws, she consistently makes the shot with a probability of , where . When she shoots six free throws, the probability that she makes exactly half of them is . What is the value of ? Express your answer as a common fraction.

DMC Mock State Target 7 & 8

1. \_\_\_\_\_\_\_\_ A circle passes through two diagonally opposite vertices of a 3-inch by 4-inch rectangle. What is the least possible distance between the center of the circle and a vertex of the rectangle? Express your answer as a common fraction.
2. \_\_\_\_\_\_\_\_ A solid right, circular cone has a base radius of 5 meters and a slant height of 10 meters. A top cone will be removed so that the volume of the remaining frustum will be 1 3 that of the original cone. In square meters, what is the total surface area, including both bases, of the frustum? Express your answer to the nearest whole number.

