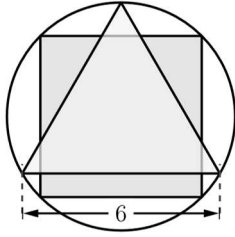


Worksheet #4

1. An equilateral triangle and a square are inscribed in the same circle. The length of the side of the triangle is 6. Calculate the area of the square.



2. A box with whole number sides L , M , and N has volume $V = 3059$. Another box with the same volume, V , has sides $L + 4$, $M - 4$, and N . What is the value of $L + M + N$?
3. How many pairs (N, M) are there such that $N > 0$, $M > 0$ are whole numbers, and $3N + 7M = 100$?
4. What is the largest even 9-digit number that is divisible by 9 and its digit sum is 63?
5. Three dice are rolled. What is the probability that the sum of the dice is less than 8? Express the answer as a fraction in lowest terms.
6. One of the water tanks of the Vancouver Aquarium has two taps. The first tap fills it at a rate of 15 litres per minute and the second tap at 20 litres per minute. Both taps were turned on when the tank was empty. But, the drain pipe was partly open and water was leaking out of the tank at a rate of 6 litres per minute during the first 2 hours before it was closed. The tank was finally filled up in 6 hours. What is the volume of the tank in m^3 , (cubic metres)? Express the answer as decimal correct to two decimal places.