



- 1 Prime number is number which has only itself and 1 as factors. The first few prime numbers are 2, 3, 5, 7, 11, ... Suppose the number of units in each of the length and width of a rectangle is a prime number and the perimeter is 60 units. What is the largest number of square units the area could have?





- 2** A box has 5 red balls, 6 white balls and 7 blue balls, all of the same size. Suppose Angie is blindfolded and picks any number of balls from the box. What is the least number of balls she must pick in order to absolutely certain that there are 3 balls of the same colour among those she has picked?



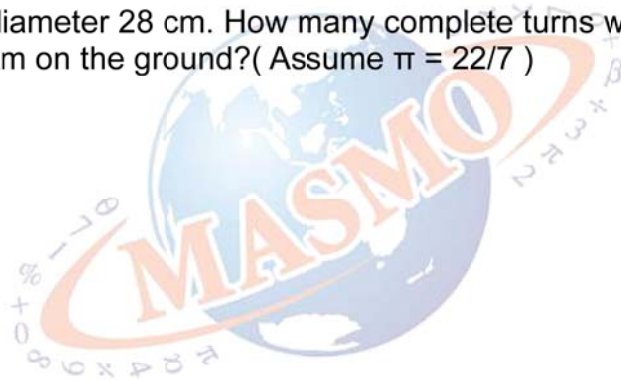


- 3** Suppose $3! = 3 \times 2 \times 1$, $4! = 4 \times 3 \times 2 \times 1$, $5! = 5 \times 4 \times 3 \times 2 \times 1$, and so forth. What is the value of the expression at the bottom in simplest form?

$$\frac{9! - 7!}{3! \times 5!}$$



- 4** A wheel has diameter 28 cm. How many complete turns will the wheel make in rolling 1.1 km on the ground?(Assume $\pi = 22/7$)





- 5 Two cats, Sammy and Kenny have a rat race. In the first day, Sammy's rats are 20% behind of Kenny's. If Kenny catches the same number of rats in the first and second day, by how many percents more shall Sammy catch in the second day to be even with Kenny in total rats they caught?

