Area of a Circle Word Problems
## How to use area of a circle formula to solve word problems

Solve all of the following word problems based on area of a circle. First problem is done as an example and one more problem is for you to solve.

Find the area swept by a clock's minute hand in one hour. The length of the minute hand is 10.2 cm. What is area swept in 30 minutes and 2 hours by same hand?

Solution: You should know that the minute hand sweeps one full circle in one hour. So we need to find the area of a circle with radius equal to the length of the minute hand.

If we divide the above result by 2, we get the area swept in 30 min.

Multiply the one hour result by 2 to find the area swept by same minute hand in 2 hours.
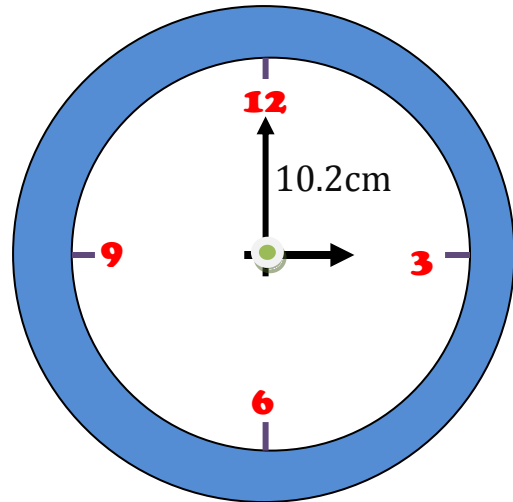
Radius of the circle "r" = Length of minute hand = 10.2 cm

Area swept in one hour = Area of full circle = πr^2

Hence the area swept in one hour = 3.14 x 10.2^2
                                 = 3.14 x 104.04
                                 = 326.69 cm^2

So, area swept in one hour is 326.69 cm^2. We can divide it by 2 to find the area swept in 30 minutes, as shown below:

Area swept in 30 minutes = 326.69 ÷ 2 = 163.34 cm^2

Area swept by same hand in 2 hours = 326.69 x 2 = 653.37 cm^2

Now it's your turn to show what you know, and have learned from the above presentation. Do the same kind of exercise on the next page.