Question #31970

a merry-go-round of 10 m radius with children sitting on it,is revolving at the rate of 1 revolution per minute. calculate the velocity of the children sitting on it?

Solution:

The linear velocity in rotational motion is expressed by the following formula:

$$v = \frac{2\pi R}{T}$$

where:

R is the radius;

T is the rotation period.

We're given that

$T = 60\ sec$ (because we have 1 revolution per minute).

Therefore, substituting given values, we obtain:

$$v = \frac{2*3.14*10}{60} = 1.05\ m/sec$$

Answer: velocity is 1.05 m/sec.