Question #29115

the diameter of an automobile wheel with its tire is 23 inches. how many
revolutions does the wheel make in going a mile? and in going kilometer?

Answer:

The number of revolutions is:

$$N = \frac{S}{L}$$

Were S is the total distance L is the length of the wheel's circle

For mile

$$L = 3{,}14 * 23 = 72.22"$$

$$1 mile = 63360"$$

$$N = \frac{63360}{72.22} = 877$$

For kilometer

$$L = 3{,}14 * 23 = 72.22" = 1.83\ m$$

$$N = \frac{1000}{1.83} = 546$$

Answer: for mile 877, for kilometer 546 revolutions.