Mathematics Question-1

Auto fare

A photo of the auto-rickshaw meter reading during a travel from Vivek Vihar to ITO in Delhi and the latest fare rules are given below.


Auto-Rickshaw	Rs 25/- for the first fall of 1.5 Kilometer (upon downing the meter) and after that Rs. 9.5/- per Kilometer for every additional Kilometer
Night Charges	25% of the fare (11:00 PM to 5:00 AM)
	Rs 45/- per hour or 0.75 per minute or part thereof (Subject to a minimum of 15 minutes stay)
Waiting Charges	Rs 45/- per hour or 0.75 per minute or part thereof (Subject to a minimum of 15 minutes stay)
Luggage	Rs. 7.50/- shall be charged as extra luggage charges whereas the driver/ operator shall not charge and money for a shopping bag or a small suitcase

Challenge: Check whether the meter reading is calibrated with the revised fare. State your assumptions (if any).

Mathematics Question-2

Rating of a mobile App

ePathshala is an android app developed by the NCERT for providing e-contnent to the school going children and teachers. The app rating is given below .
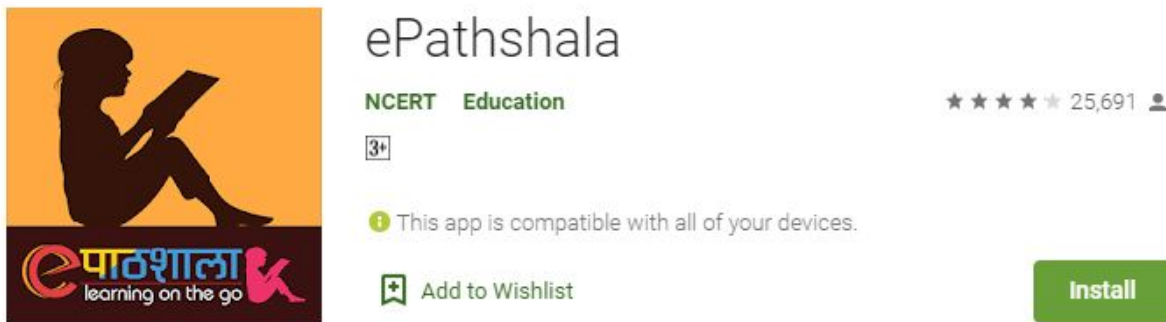
Challenge: Find out the approximate number of users rated five, if equal number of users rated 1, 2, 3 and 4.

SOLUTIONS

Mathematics Question-1

Auto fare

Solution:

According to the reading given:

Total distance travelled = 9.6 km

As per rates , Rs.9.5 rate will be applicable for 8.1 km (9.6-1.5)

Waiting time= 4.4 minutes = 4 approximately

Therefore Total fare = 25 + 8.1x9.5 + 4x0.75 = Rs.104.95

If we assume that waiting time displayed is over and above 15 minutes the meter display matches with the rates given.

Mathematics Question-2

Rating of mobile App

Solution :

Let us say that x is the number of users rated 1, 2,3 and 4 each and y be the number of users rated 5

As the average rating indicated by the stars at the top is 4 and total number of users rated the app is 25,691, we can write

(1x+2x+3x+4x+5y)/25691 = 4

i.e 10x+5y =1,02,764   (1)

Also the number of users can be written as

x+x+x+x+y= 25,691

i.e 4x+y = 25,691   (2)

Solving these two equations , we get

x = 2977 and y = 14,599

Therefore approximate total number of users rated 5 is equal to 14,599