006 An algorithm a day…

Algorithm Question

A taxi firm charges £3 for the first mile and £2 for every mile after that. If there are 5 or more passengers, an extra 50% is added to the price.

Write an algorithm which calculates the cost of a journey.

The algorithm should:

- Ask the user to enter the number of passengers
- Ask the user to enter the distance (as an integer)
- Calculate the price of the journey
- Output the price on the screen

[7 marks]

Algorithm Example Answer

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There are always different ways to solve a problem. This algorithm is just an example. What is important is that the logic is correct!

LOGIC:

- **Inputs distance and passengers**
- **Checks if distance is greater than 1**
- **If it is, it will calculate cost by adding 3 to the (distance-1) * 2**
- **If it is not, it will set cost as 3**
- **Checks if more than 4 passengers...**
- **... and adds 50% correctly**
- **Outputs cost**

EXAMPLE ALGORITHM:

```
distance = input("Enter a distance: ")
distance = int(distance)
passengers = input("Enter number of passengers: ")
passengers = int(passengers)
if distance > 1 then
    cost = 3 + ((distance - 1) * 2)
else
    cost = 3
if passengers > 4 then
    surcharge = cost / 2
    cost = cost + surcharge
endif
print(cost)
```