**Task 9: Introduction to Statistics**

Statistics and probability are very important when we talk about data analysis. You should at least know mean, median, mode, some common distributions (for example: normal distribution, binomial distribution, Poisson distribution, and uniform distribution) and some concepts of probability. **You will learn and try to solve some related problems by hand, take screenshots, and submit a PDF.**

Mean: €fx/€f

Mode= most frequently occurring number

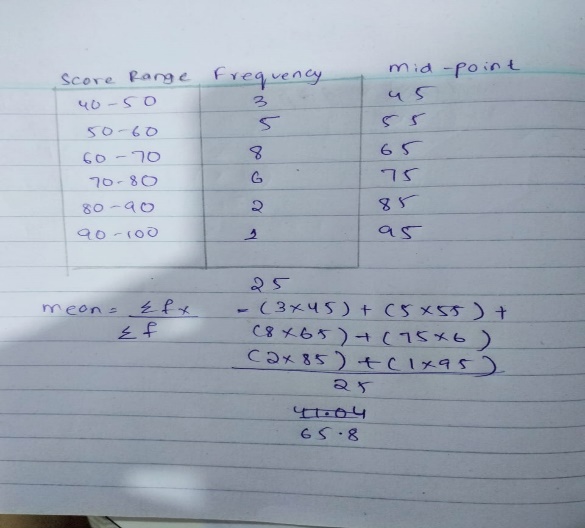
Median(even numbers)=(n+1)/2 th position

Median(odd numbers)=n/2

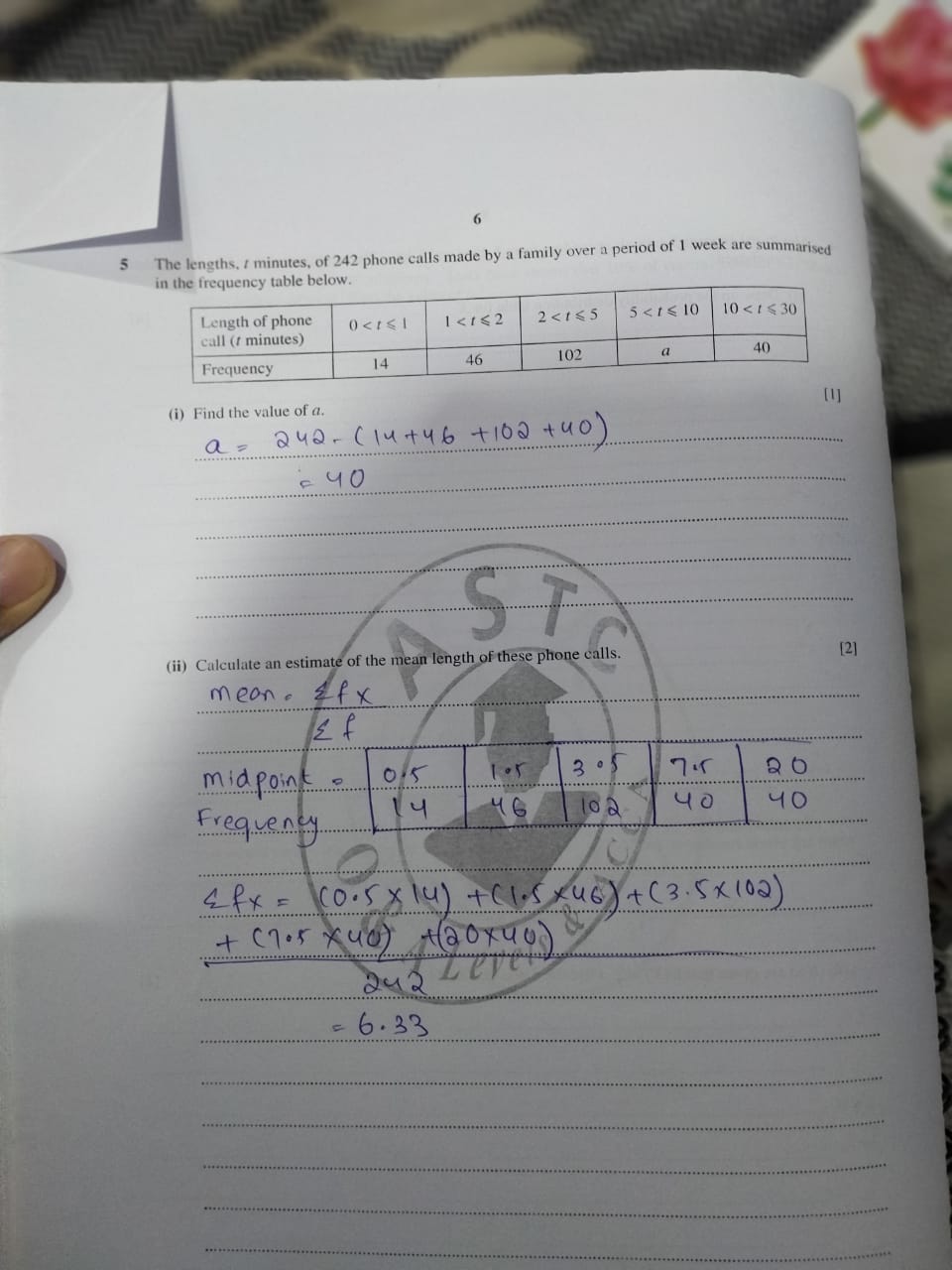
Lower Quartile = ¼\*(n+1)

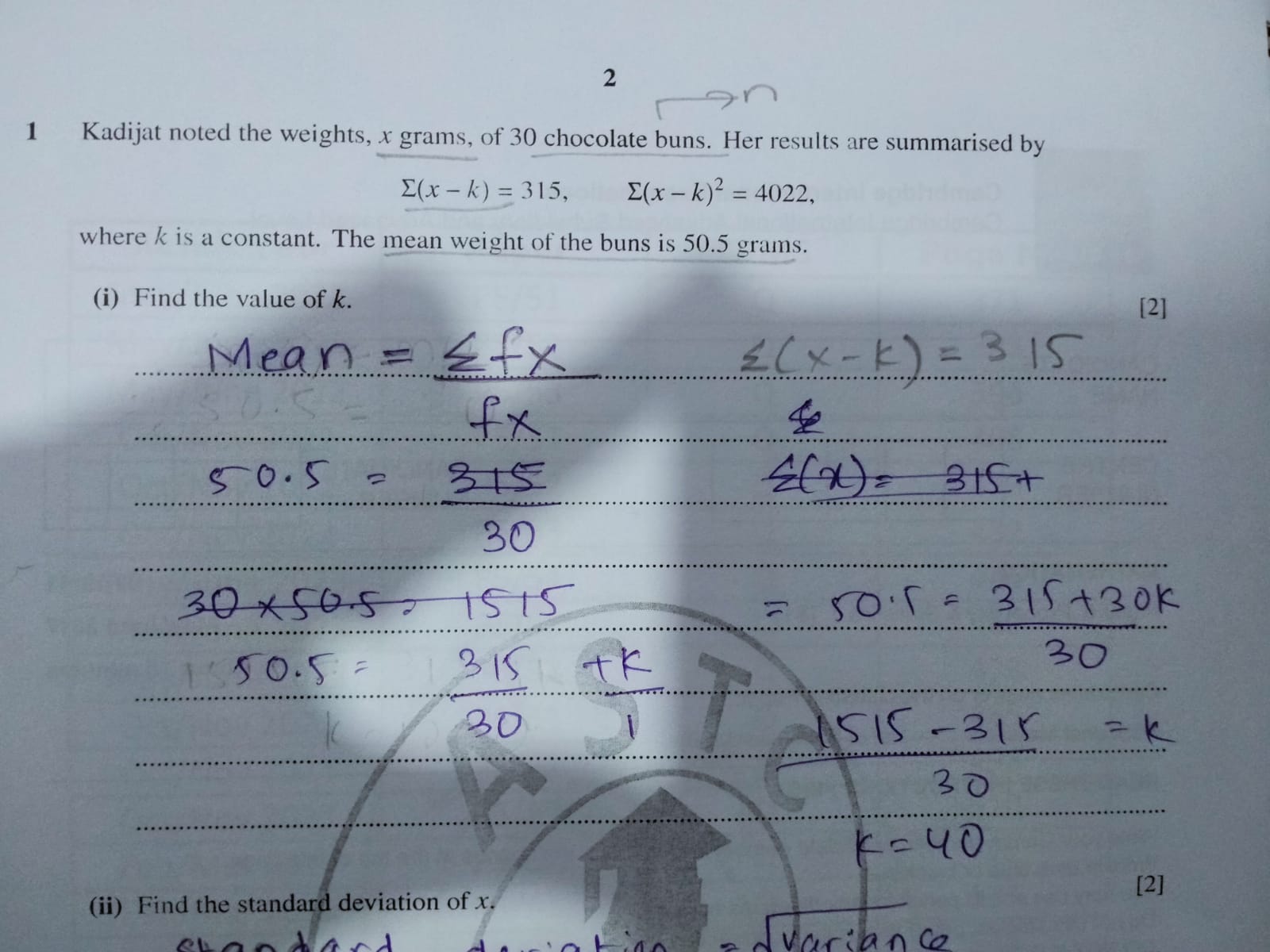
Upper quartile= ¾\*(n+1)

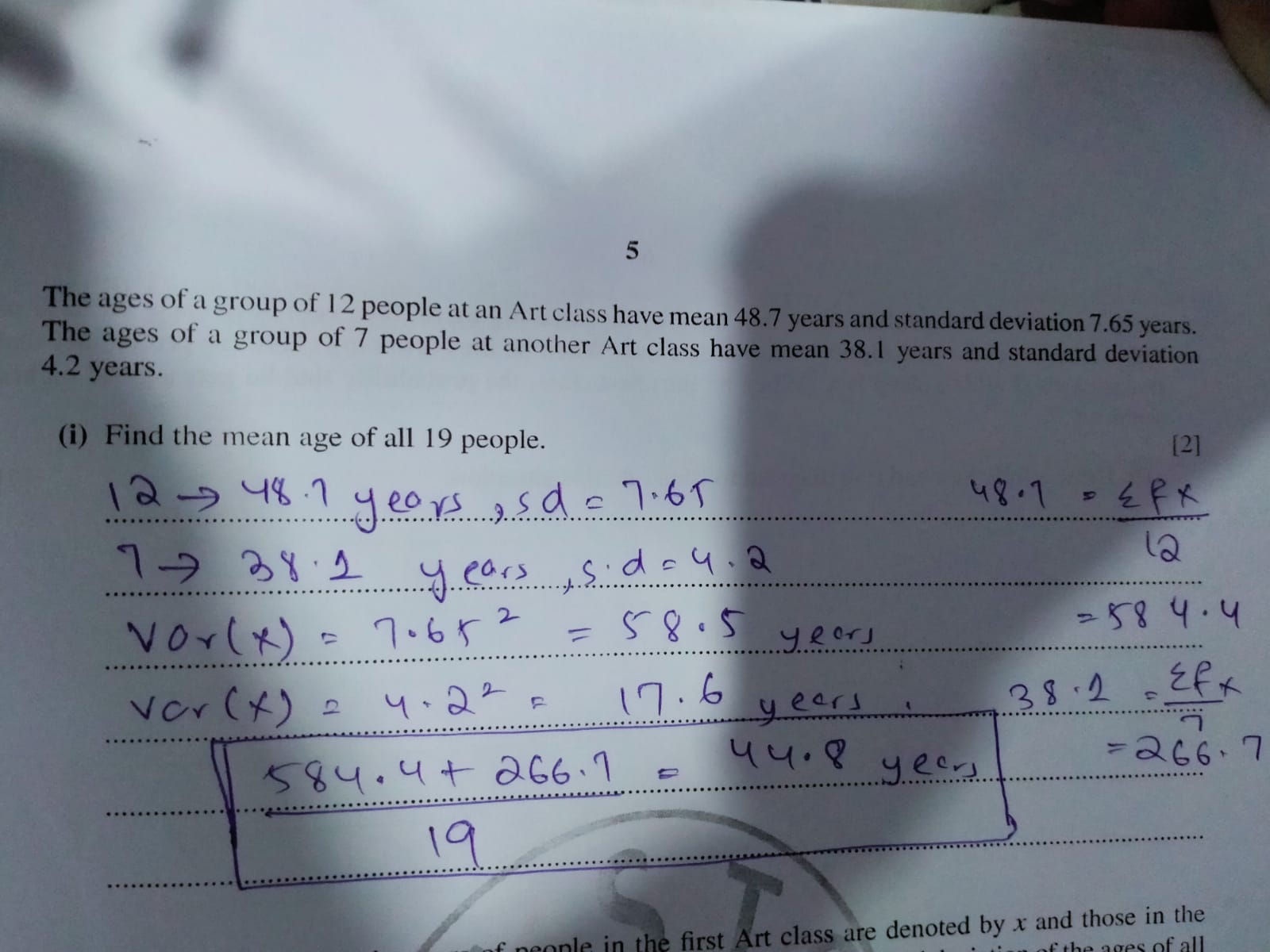
Quartile Range= U.Q-L.Q

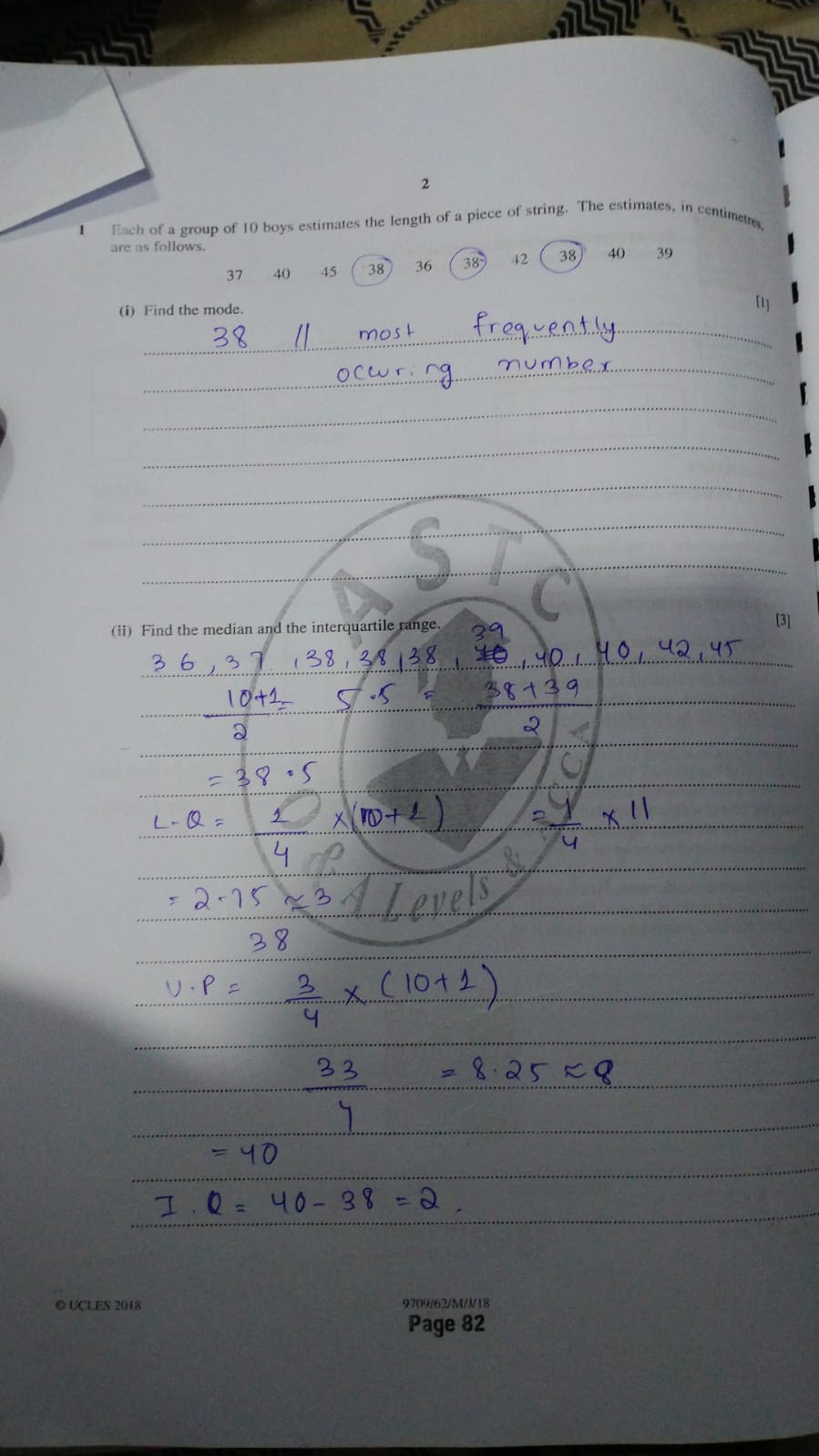
**Q1.**On a final exam, a lecturer noted each student’s score. This frequency distribution is the grouping of the scores:

| **Score Range** | **Frequency** |
| --- | --- |
| 40-50 | 3 |
| 50-60 | 5 |
| 60-70 | 8 |
| 70-80 | 6 |
| 80-90 | 2 |
| 90-100 | 1 |









Binomial Distribution:  
A random variable X is a binomial variable if the following conditions are satisfied:

1. Each trial is independent of the others.

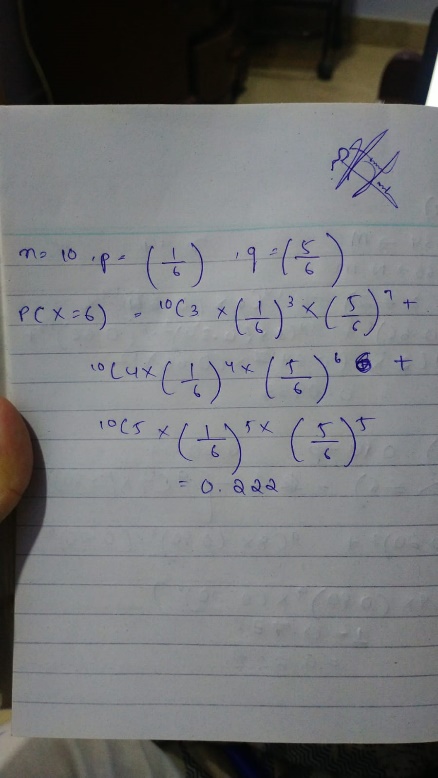
2. There is a fixed number of trials.

3. The outcome of each trial can be classified as either success or

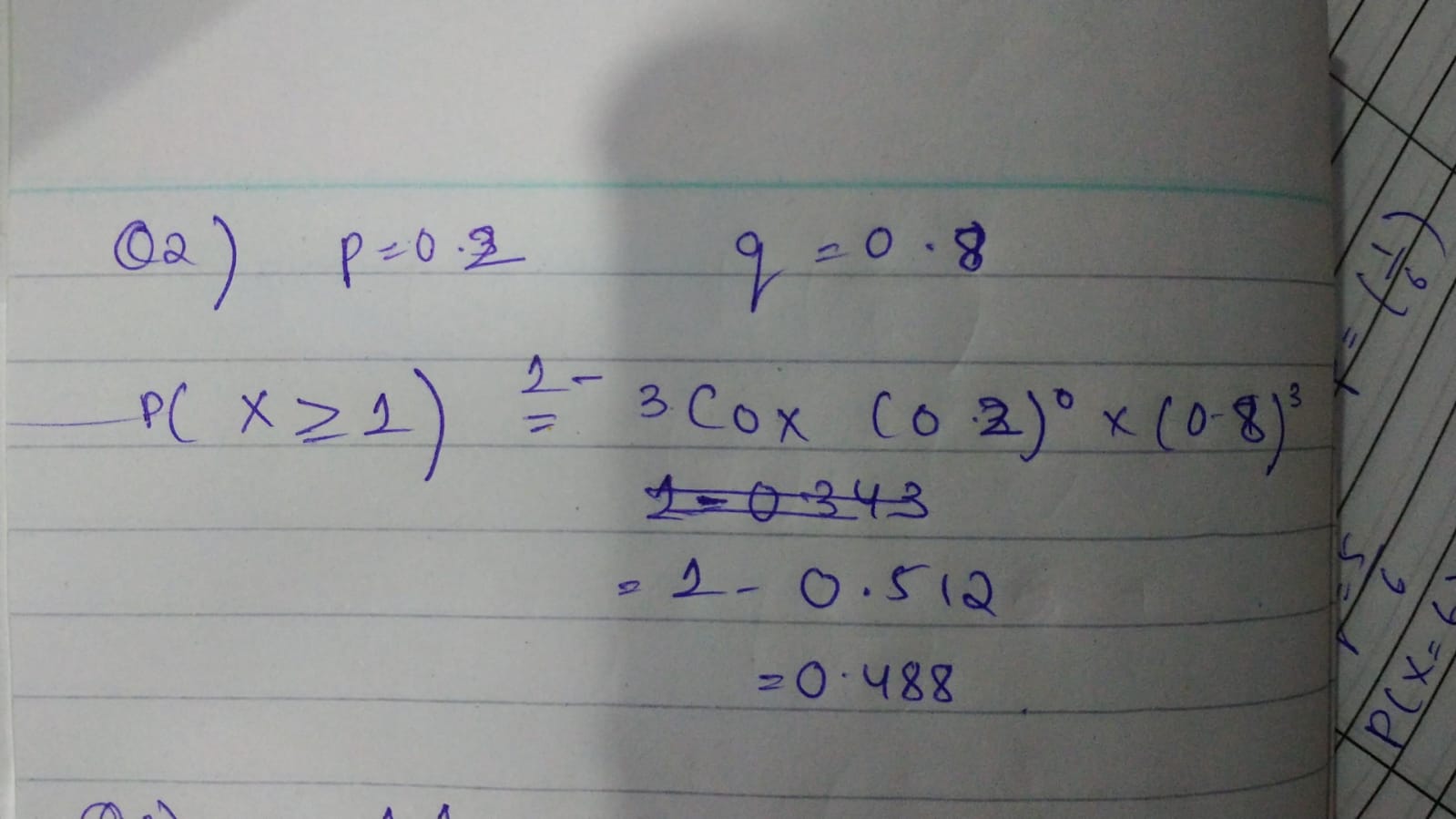
failure.

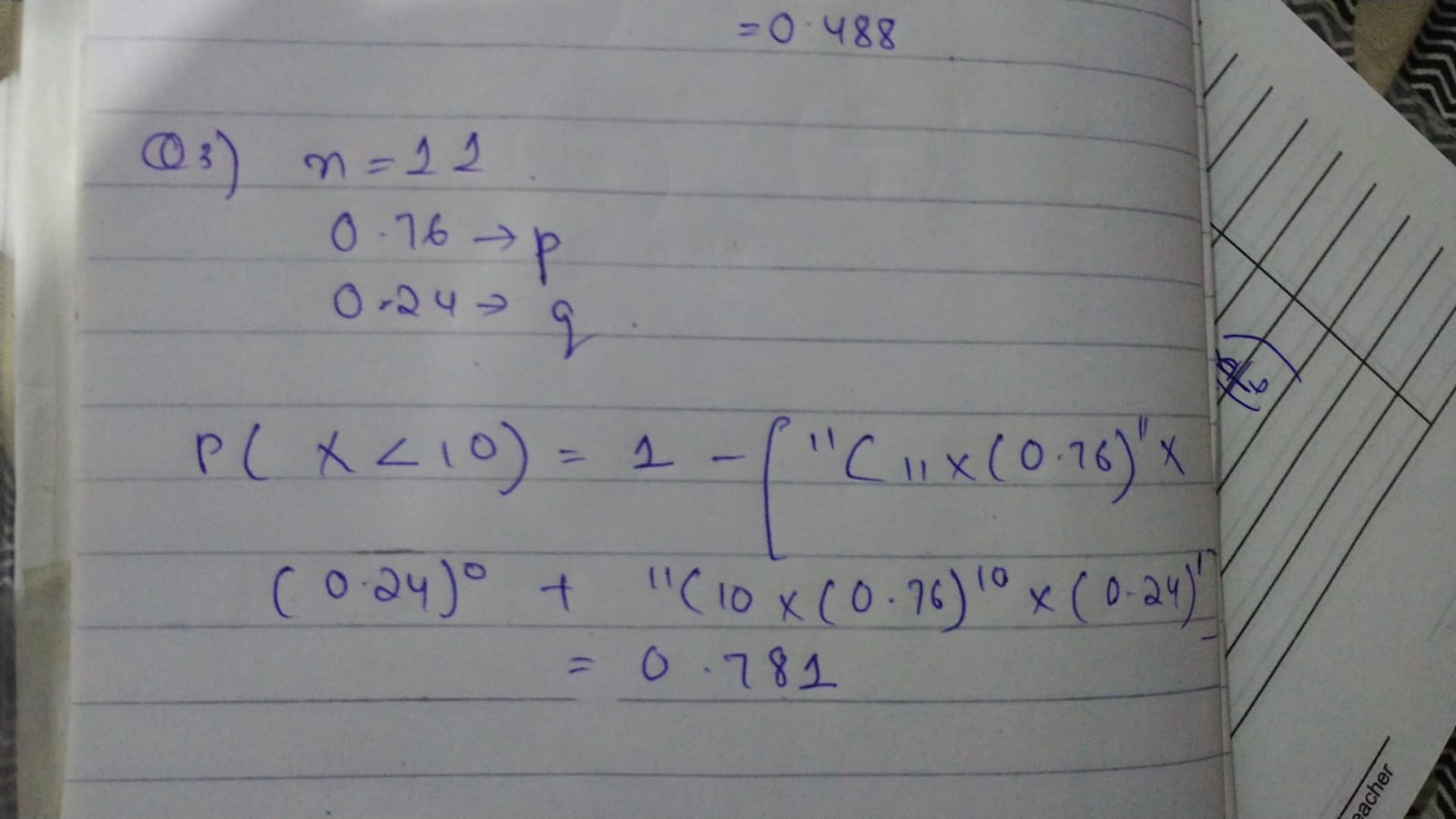
4. The probability of success stays constant over each trial.

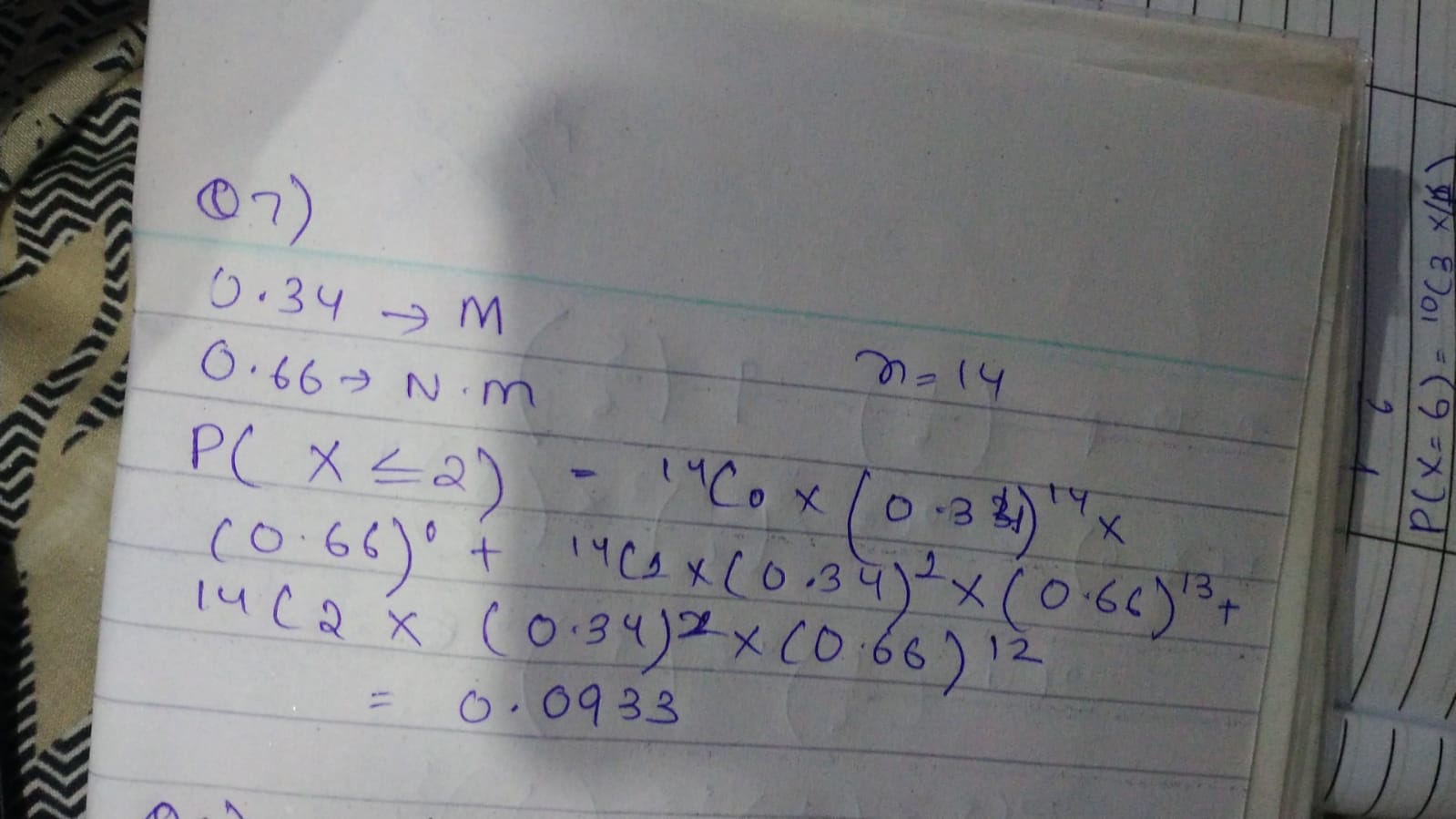
P(X = x) = nCx p^x q^(n-x)  
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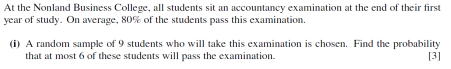
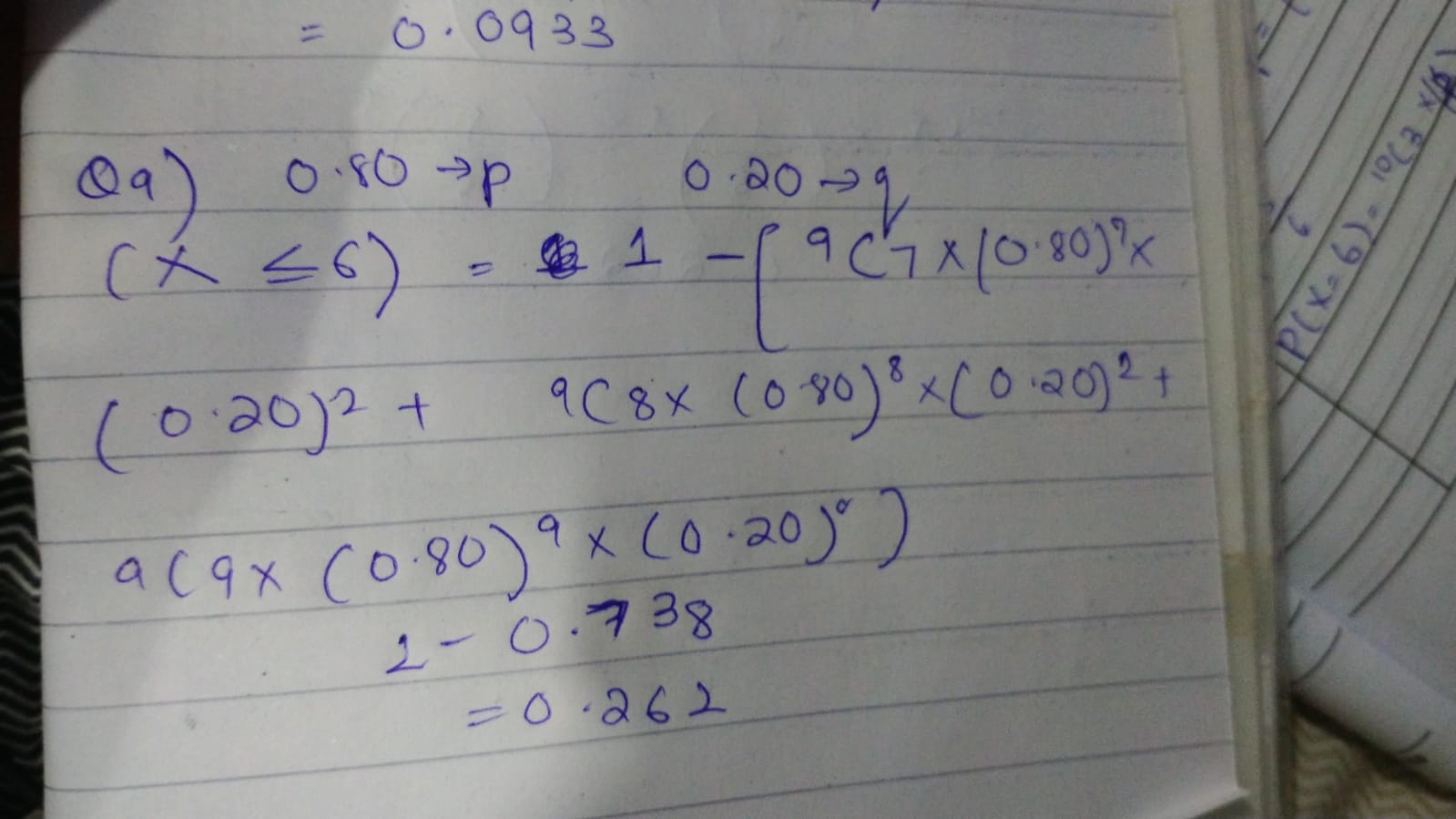


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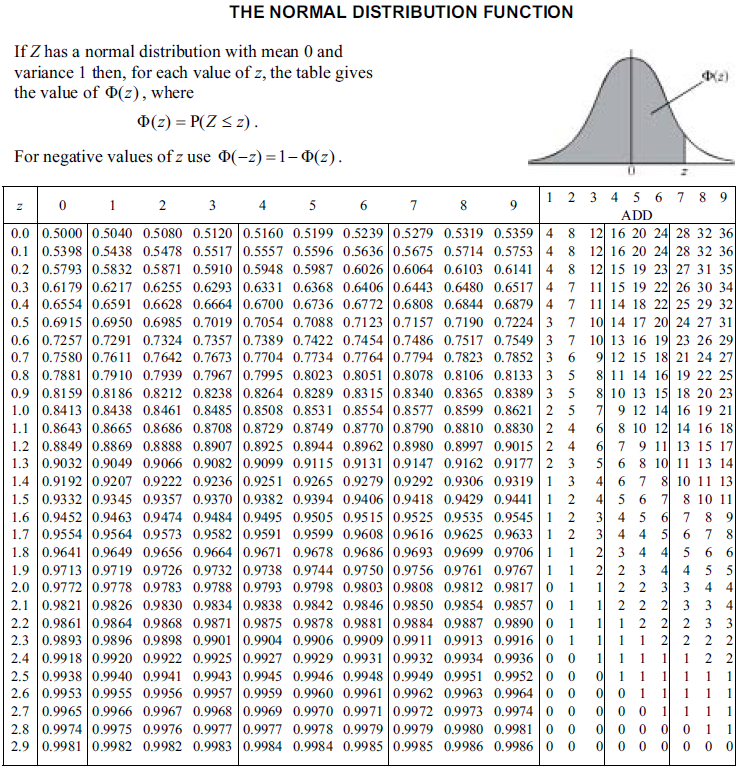
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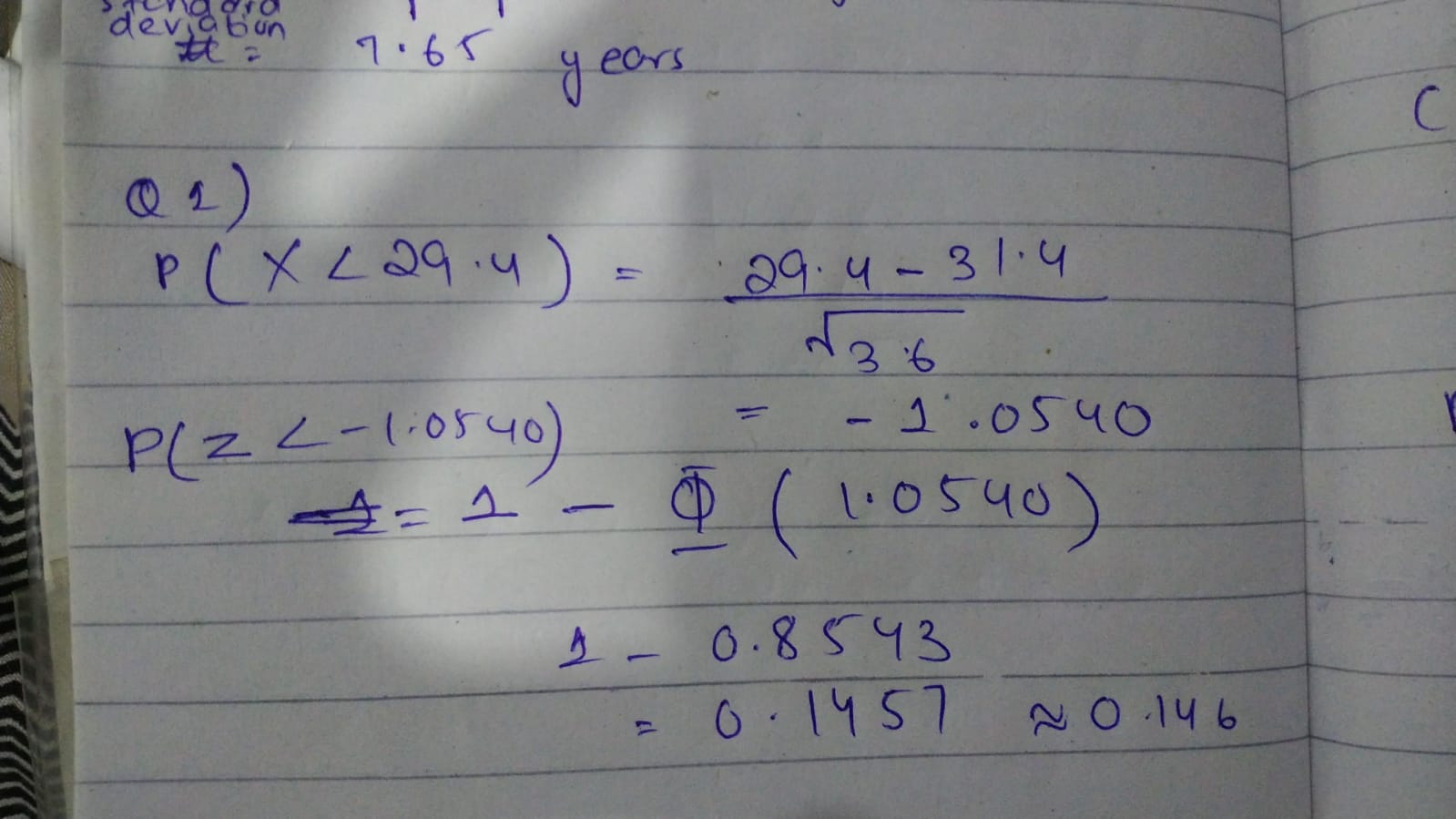
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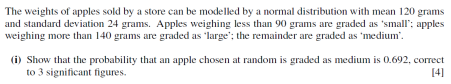
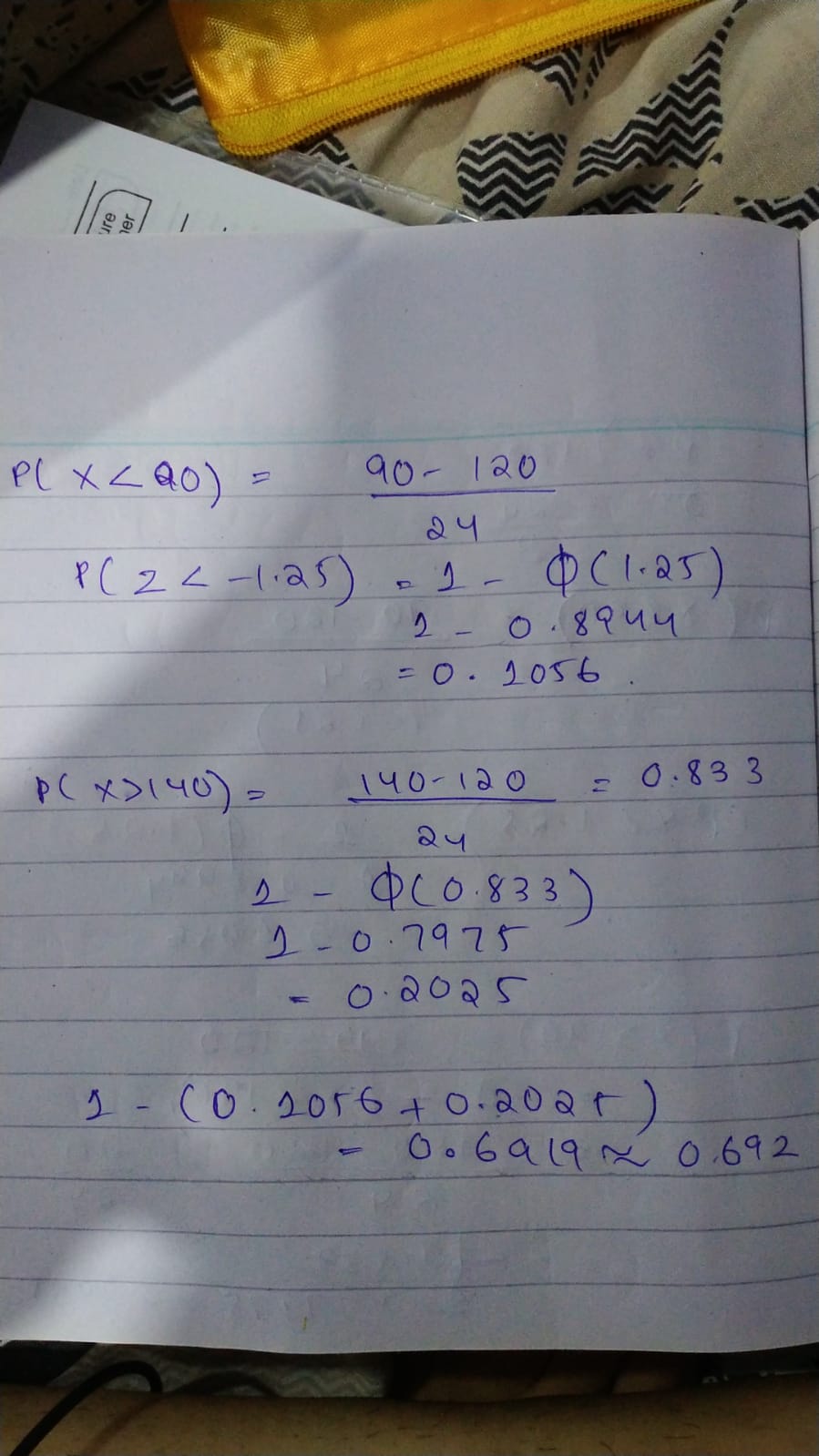
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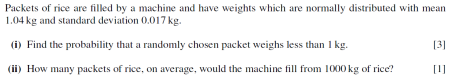
Used MF19 (ALEVELS S1) table or values of z

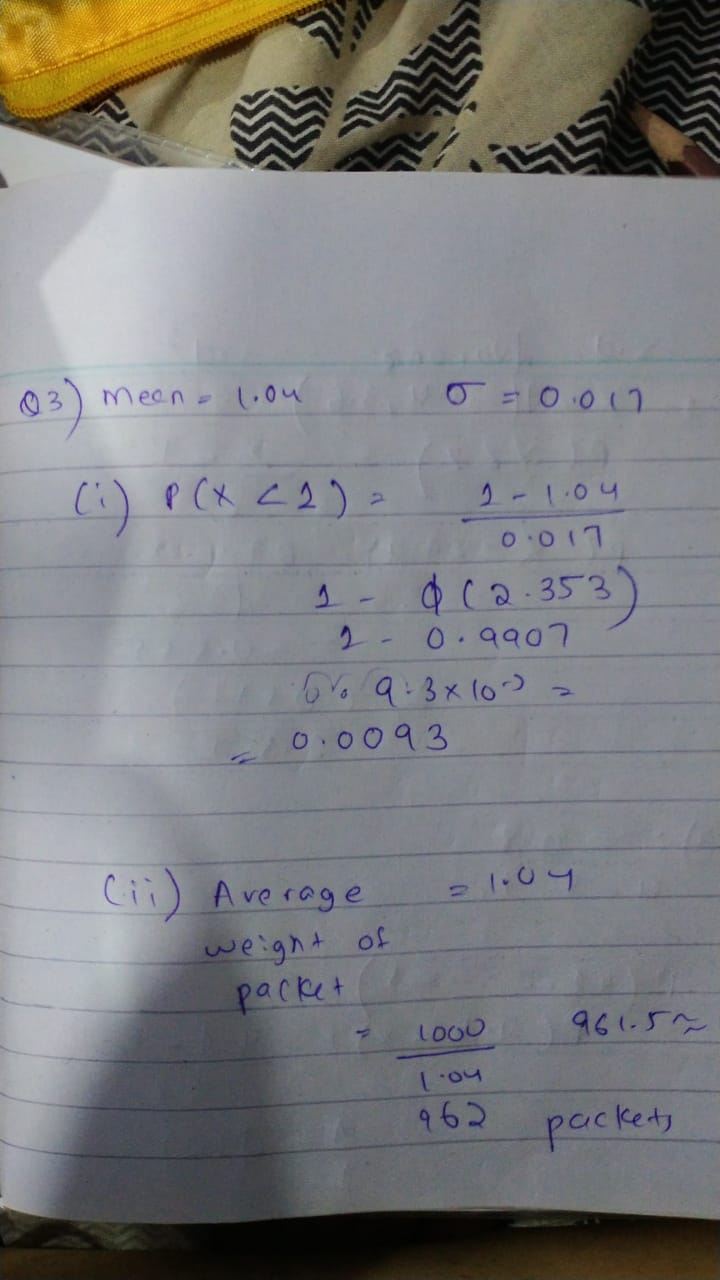


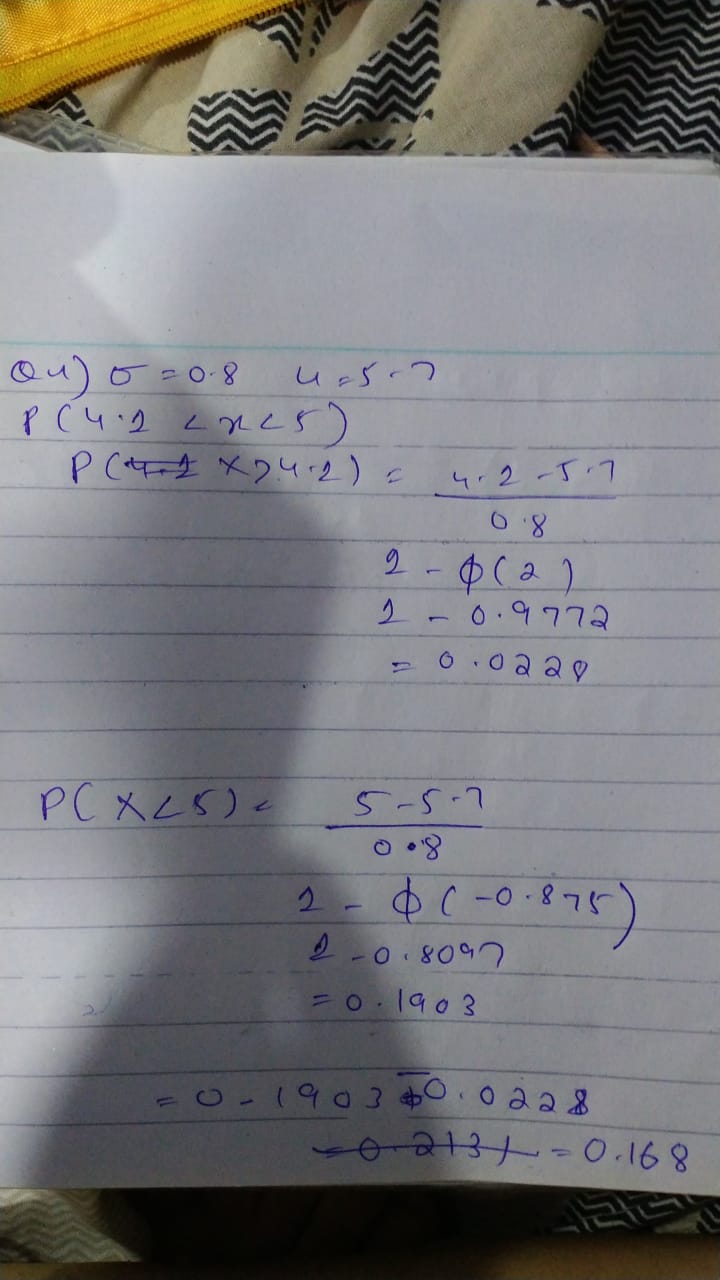
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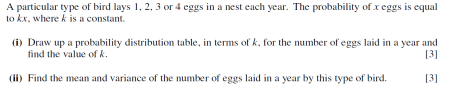
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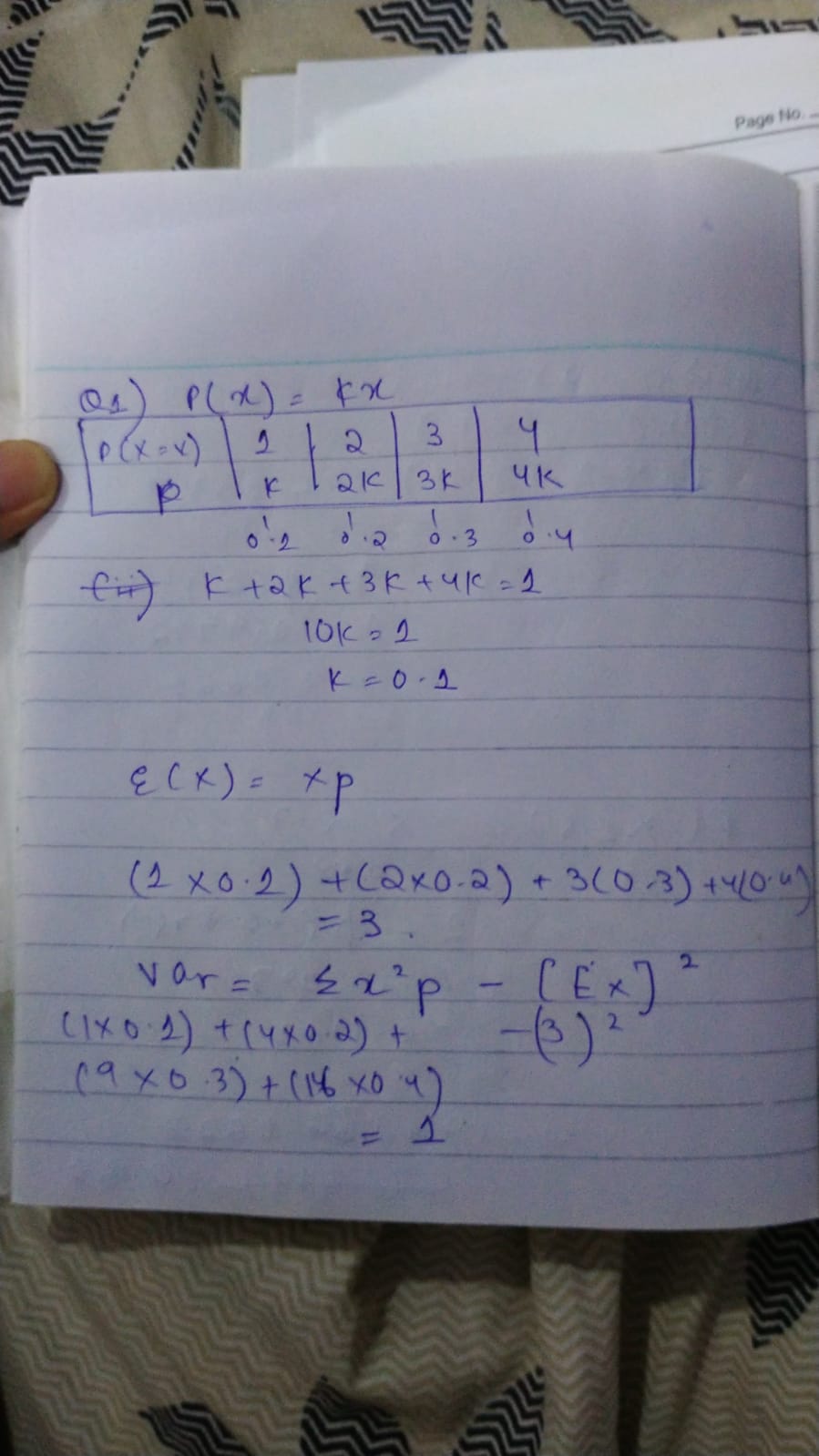
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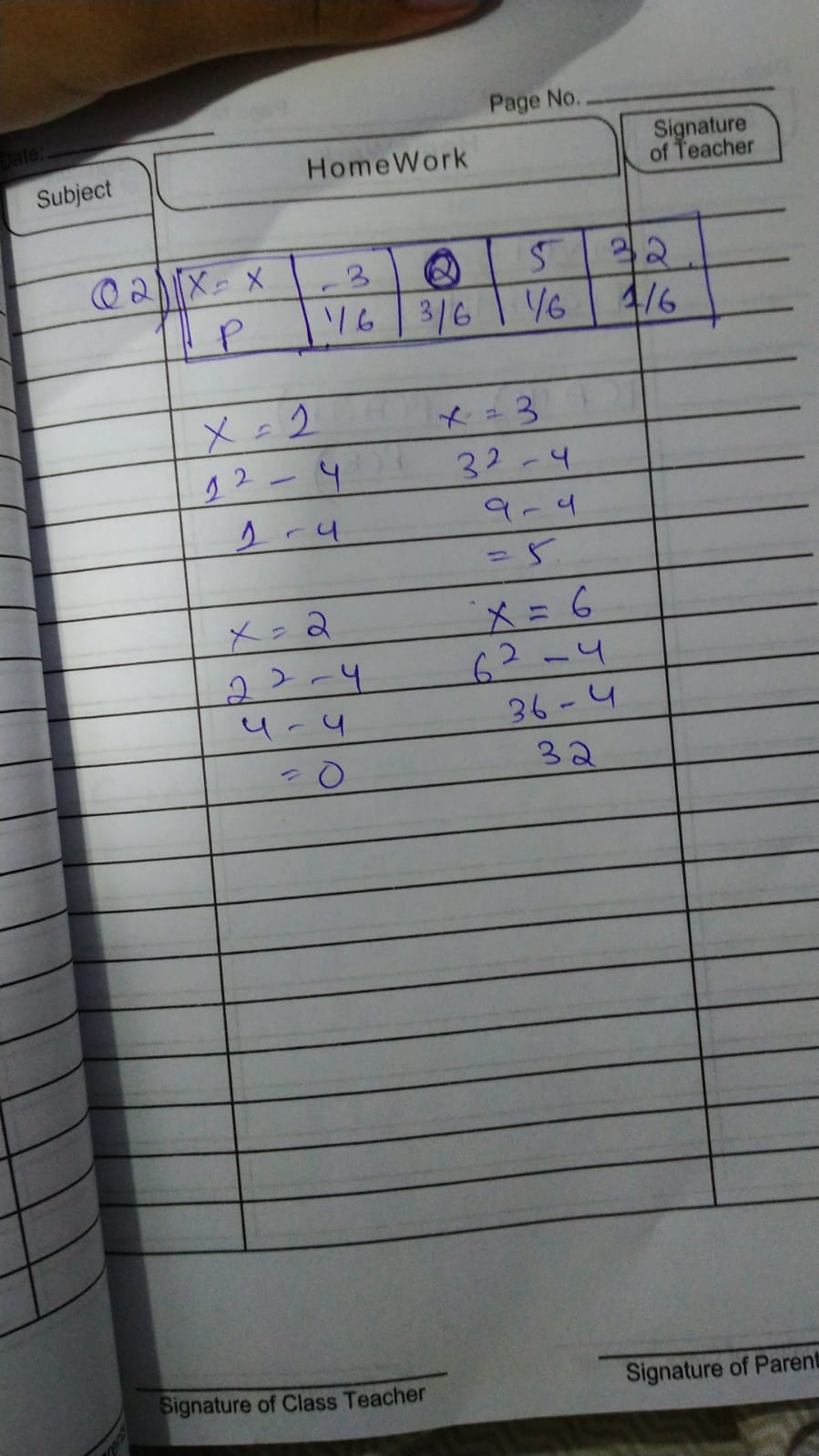
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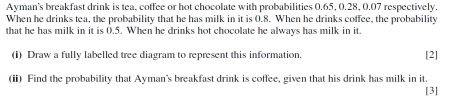
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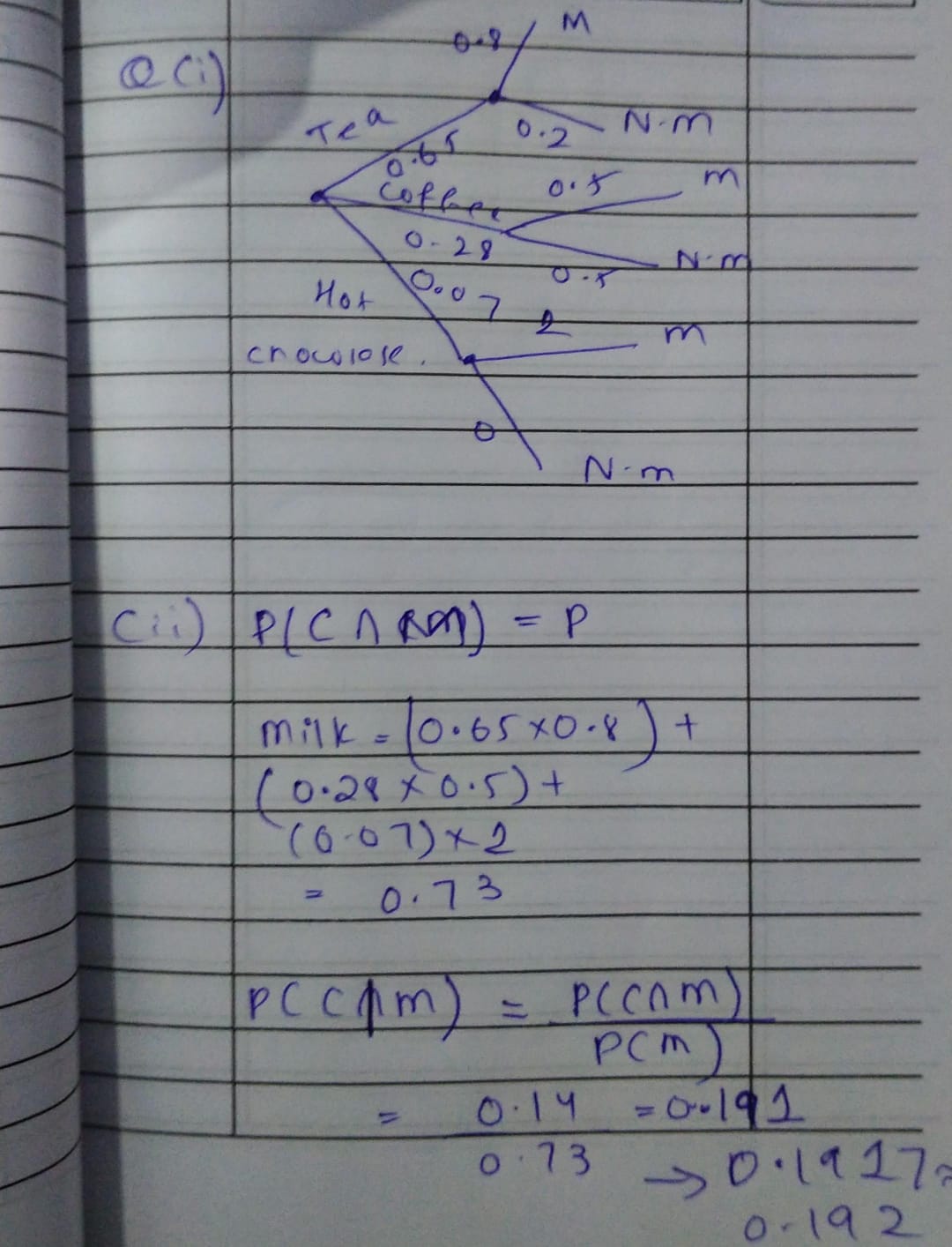
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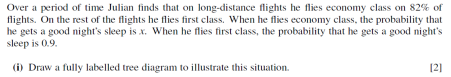


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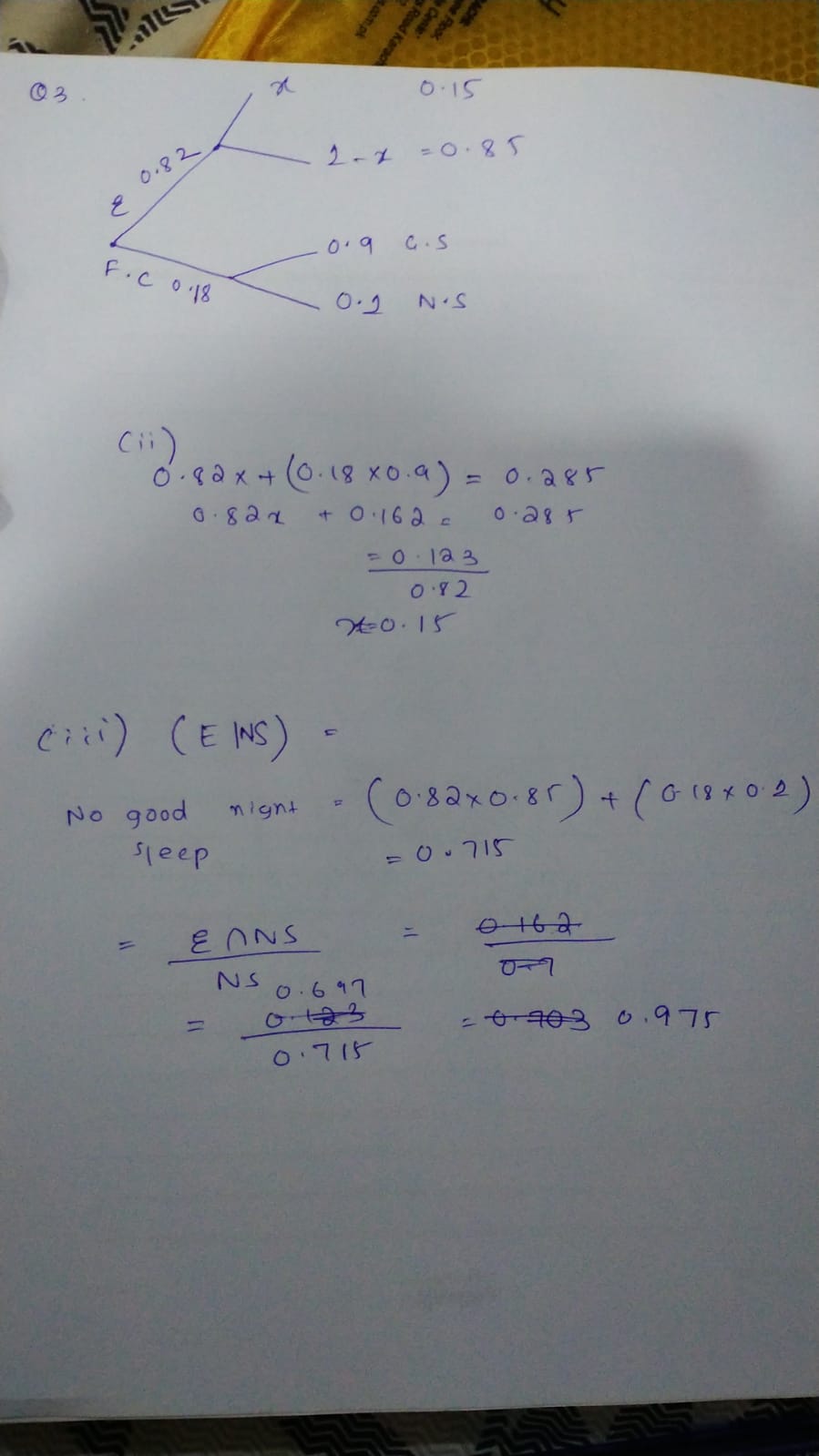


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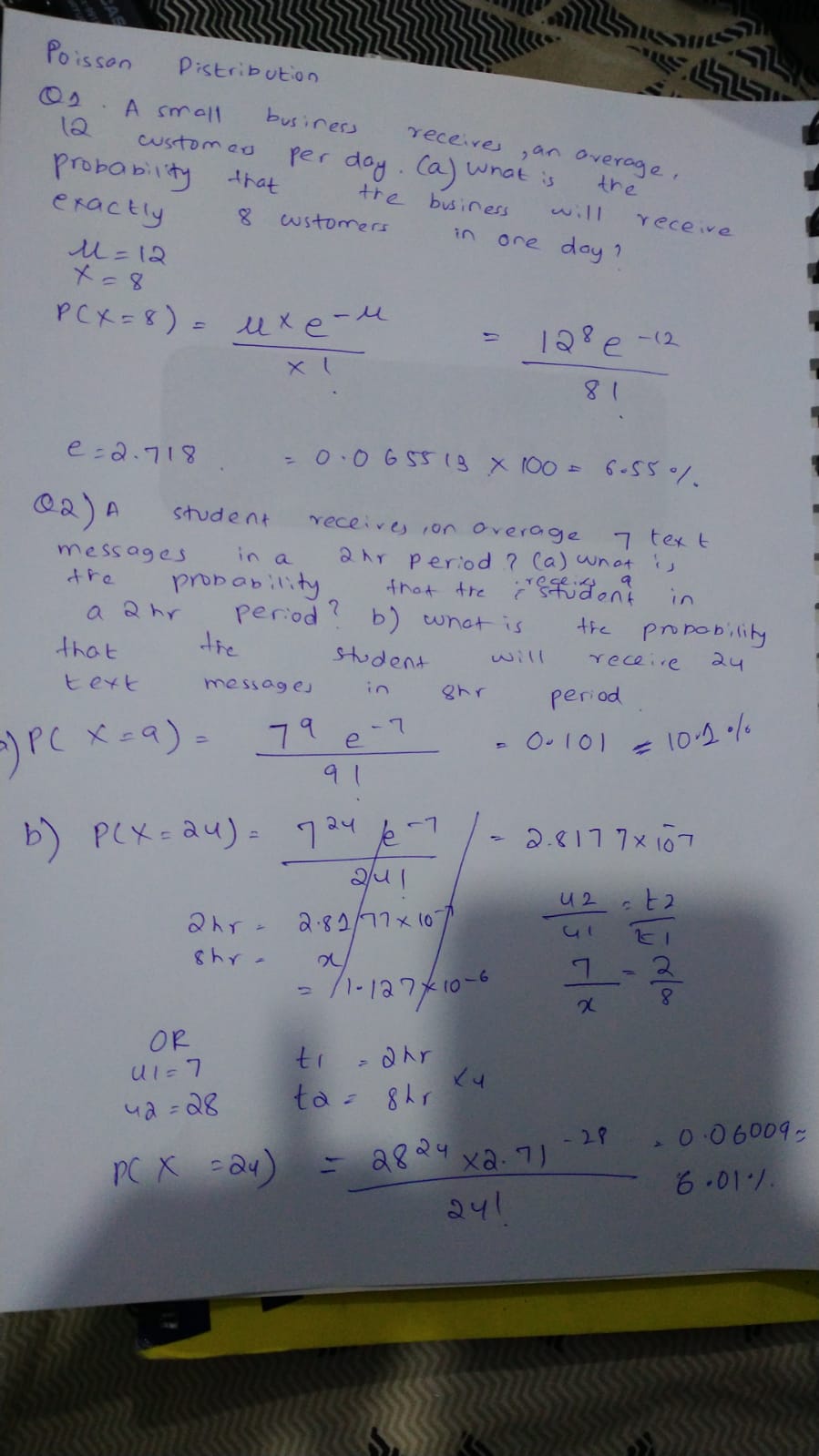


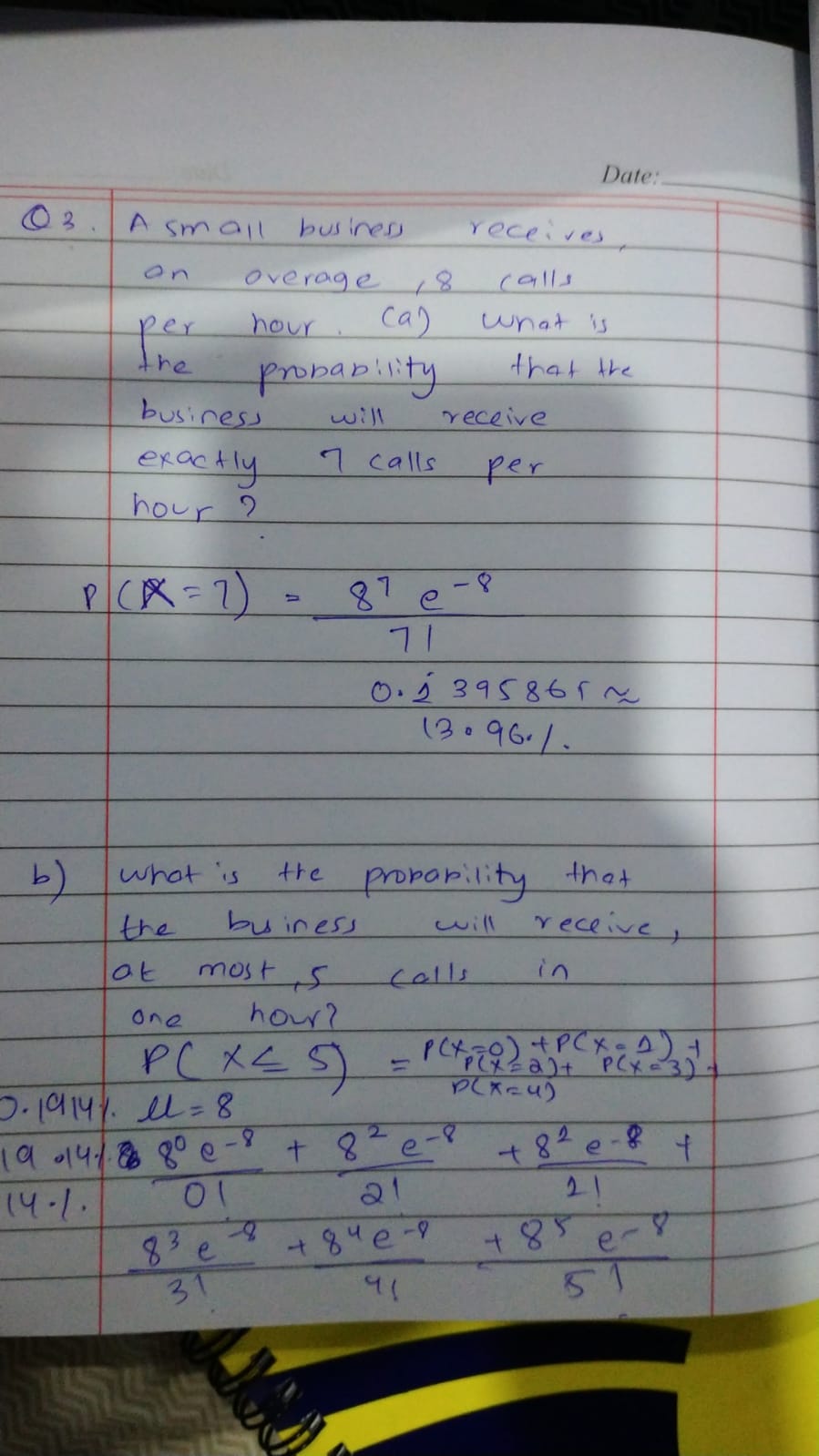
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