

I will use the random number function on my calculator to generate numbers from 1 – 10. Each number represents a different symbol. Numbers 1 – 4 represent an apple, numbers 5 – 7 represent a pineapple, numbers 8 – 9 represent a grape and number 10 represents a strawberry.

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One trial consists of generating random numbers until all four are obtained or until a maximum of 10 random numbers are generated. A successful trial is when all four symbols are obtained within the 10 number maximum i.e. (3, 8, 1, 5, 9, 10) is a successful outcome.

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I will repeat this process 20 times. I will also record the number of days it took for each trial. This I will use to find the mean number of days she will buy ice blocks for.

1 – 4 = apple    5 – 7 = pineapple    8 – 9 = grape    10 = strawberry

Trial	Results	No of days	All symbols
1	2, 7, 3, 1, 5, 6, 2, 1, 3, 3	10	✗
2	3, 8, 9, 6, 1, 8, 8, 3, 10	9	✓
3	1, 10, 9, 6	4	✓
4	3, 6, 9, 19	4	✓
5	5, 9, 5, 4, 2, 8, 6, 5, 5, 2	10	✗
6	1, 4, 3, 8, 2, 10, 4, 7	8	✓
7	2, 7, 7, 7, 8, 5, 10	7	✓
8	5, 8, 4, 1, 3, 9, 1, 4, 8, 4	10	✗
9	9, 2, 7, 4, 10	5	✓
10	5, 1, 8, 5, 6, 10	6	✓
11	5, 5, 8, 4, 4, 5, 1, 6, 1, 5	10	✗
12	4, 4, 3, 2, 6, 5, 4, 10, 7, 9	10	✓
13	4, 1, 9, 8, 5, 6, 6, 5, 10	9	✓
14	4, 6, 9, 10	4	✓
15	2, 4, 9, 2, 1, 1, 4, 8, 8, 6	10	✗
16	2, 8, 8, 1, 7, 1, 7, 2, 8, 8	10	✗
17	9, 2, 3, 7, 3, 2, 9, 3, 4, 2	10	✗
18	4, 1, 3, 8, 10, 3, 2, 2, 3, 6	10	✓
19	1, 4, 4, 6, 9, 7, 6, 6, 6, 10	10	✓
20	9, 8, 4, 9, 6, 4, 7, 1, 9, 1	10	✗
Total =		166	12

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Grace chances of winning a free movie ticket are 12 times in 20.

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