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| **Probability of Multiple Independent Events** |
| Calculates theoretical probability for 3 independent events A pointer is spun 3 times.Sample space:R, R, R G, G, GR, R, G G, G, RR, G, R G, R, GR, G, G G, R, R There are 8 possible outcomes.For 2 reds and 1 green, in any order, there are 3 favourable outcomes so the theoretical probability of 2 reds and 1 green is: $\frac{3}{8}$ = 0.375For red, red, green, in that order, there is 1 favourable outcome so the theoretical probability of red, red, green is: $\frac{1}{8}$ = 0.125 | Calculates experimental probability for 3 independent eventsA pointer is spun 3 times.The results for 10 trials:G, R, G G, G, RR, R, G R, R, RG, R, G R, R, RG, R, G R, G, RR, G, G G, R, RFor 2 reds and 1 green, in any order, the outcome occurred 3 times so the experimental probability of 2 reds and 1 green is: $\frac{3}{10}$ = 0.3For red, red, green, in that order, the outcome occurred 1 time, so the experimental probability of red, red, green is: $\frac{1}{10}$ = 0.1 | Compares theoretical and experimental probabilities for 3 independent eventsTheoretical probability of 2 reds and 1 green is: $\frac{3}{8}$ = 0.375Experimental probability of 2 reds and 1 green is: $\frac{3}{10}$ = 0.3The theoretical probability of red, red, green is: $\frac{1}{8}$ = 0.125The experimental probability of red, red, green is: $\frac{1}{10}$ = 0.1For each multiple event, the theoretical probability is greater than the experimental probability, but the probabilities are close in value. | Understands how the experimental probability is affected by many trials For 100s of trials of an experiment, the experimental probability of an outcome may approach its theoretical probability. |

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| **Observations/Documentation** |
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