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| **Theoretical Probability with Counters** |
| A bag contains 7 red counters and 3 white counters. A counter is chosen at random. | **(a)** | **(b)** | **(c)** | **(d)** |
| What is the probability that a white counter is chosen? | What is the probability that a black counter is chosen? | What is the probability that the counter chosen is not white? | How many white counters would need to be added to the bag to make the probability of choosing a white counter equal to $\frac{1}{2} $? |
| A bag contains 2 white counters, 4 orange counters and 4 black counters. A counter is chosen at random. | **(e)** | **(f)** | **(g)** | **(h)** |
| What is the probability that a black counter is chosen? | What is the probability that a white or orange counter is chosen? | What is the probability that the counter chosen is not white? | How many black counters would need to be added to the bag to make the probability of choosing a black counter equal to $\frac{1}{2} $? |
| A bag contains 1 black counter, 3 green counters and 4 white counters. A counter is chosen at random. | **(i)** | **(j)** | **(k)** | **(l)** |
| What is the probability that a white counter is chosen? | What is the probability that a green, white or black counter is chosen? | What is the probability that the counter chosen is not black? | How many white counters would need to be added to the bag to make the probability of choosing a white counter equal to $\frac{2}{3} $? |
| **Bag A** contains 7 blue counters and 5 red counters. The rest of the counters are white.**Bag B** contains 3 blue counters, 2 white counters and 5 red counters. | **(m)** | **(n)** | **(o)** |
| The probability of choosing a blue counter from bag A is 0.35. What is the total number of counters in bag A?  | Ali takes a counter at random from bag A. Ben takes a counter at random from bag B. Who has the greater probability of taking a blue counter? | How many red counters does Ben need to add to bag A to make the probability of choosing a red counter from bag A the same as from bag B? |