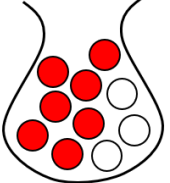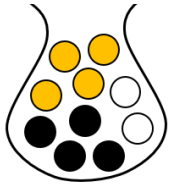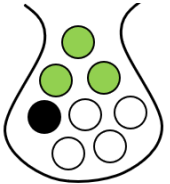# Theoretical Probability with Counters

A bag contains 7 red counters and 3 white counters. A counter is chosen at random.	**(a)** What is the probability that a white counter is chosen? $$\frac{3}{10}$$	**(b)** What is the probability that a black counter is chosen? $$0$$	**(c)** What is the probability that the counter chosen is not white? $$\frac{7}{10}$$	**(d)** How many white counters would need to be added to the bag to make the probability of choosing a white counter equal to $\frac{1}{2}$? $$4$$
A bag contains 2 white counters, 4 orange counters and 4 black counters. A counter is chosen at random.	**(e)** What is the probability that a black counter is chosen? $$\frac{4}{10} = \frac{2}{5}$$	**(f)** What is the probability that a white or orange counter is chosen? $$\frac{6}{10} = \frac{3}{5}$$	**(g)** What is the probability that the counter chosen is not white? $$\frac{8}{10} = \frac{4}{5}$$	**(h)** How many black counters would need to be added to the bag to make the probability of choosing a black counter equal to $\frac{1}{2}$? $$2$$
A bag contains 1 black counter, 3 green counters and 4 white counters. A counter is chosen at random.	**(i)** What is the probability that a white counter is chosen? $$\frac{4}{8} = \frac{1}{2}$$	**(j)** What is the probability that a green, white or black counter is chosen? $$1$$	**(k)** What is the probability that the counter chosen is not black? $$\frac{7}{8}$$	**(l)** How many white counters would need to be added to the bag to make the probability of choosing a white counter equal to $\frac{2}{3}$? $$4$$
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)** The probability of choosing a blue counter from bag A is 0.35. What is the total number of counters in bag A? $$20$$	**(n)** Ali takes a counter at random from bag A. Ben takes a counter at random from bag B. Who has the greater probability of choosing a blue counter? *Ali* *0.35 for bag A, 0.3 for bag B*		**(o)** 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? $$10$$