

1. Different coloured counters are placed in a bag. The probabilities of each counter is given.

Colour	Red	Blue	Green	Purple
Probability	$2x$	$0.5 - x$	$3x - 0.05$	0.15

- a) Find the probability of selecting a green counter
- b) You are told there are 18 purple counters in the bag. Find how many blue, green and red counters there are?

2. Different coloured Lego bricks are placed in a bag. The probabilities of getting each Lego brick is given.

Colour	Yellow	Green	Brown	Pink
Probability	$4x$	$5x + 0.02$	$3x$	0.26

- a) Find the probability of selecting a brown Lego brick
- b) Given that there are 156 pink Lego bricks, how many bricks are there in total?

3. Different coloured sponges are placed in a bag. The probabilities of getting each sponge is given. You are three times more likely to get a red sponge than a blue sponge

Colour	Blue	Red	Pink	Yellow
Probability	$3x + 0.08$		0.12	$2x$

- a) Find the probability of selecting a yellow sponge
- b) Given that there are 24 pink sponges, how many sponges are there in total?

4. A number of beetles are dipped in coloured paint and put into a jar. The probability of picking beetle with a certain colour is below. You are half as likely to get a blue beetle as you are a green beetle. You are 25% more likely to get gold beetle than a green one.

Colour	Green	Blue	Gold	Silver
Probability	$8x + 0.04$			0.01

- a) Find the probability of getting a green beetle.
- b) Given that the probability of getting a Silver beetle is 0.01, what is the minimum amount of beetles in the bag?

5. Mick's pantry is flooded and all the tins have their labels washed away. They are indistinguishable from one another. He has tins of beans, tomatoes, cat food and peaches. The probability of picking a tin of each type is given below.

Tin contents	Beans	Tomatoes	Cat Food	Peaches
Probability	$\frac{1}{3}$	$x + \frac{1}{10}$	$\frac{4}{15} - x$	$3x$

- a) Find the probability of selecting tomatoes **or** peaches.
- b) You are told that you have 4 more tins of tomatoes than cat food. How many tins do you have in total?
- c) What is the minimum number of tins? Give a reason for your answer.
6. Bess, Cress, Jess and Tess are having a pumpkin carving competition. Tess has a one in five chance of winning. Cress has 5% less than double the chance Bess has of winning. Whilst Jess has the same chance of winning as Bess or Cress. What is the probability of Bess winning the competition?

1. Different coloured counters are placed in a bag. The probabilities of each counter is given.

Colour	Red	Blue	Green	Purple
Probability	$2x$	$0.5 - x$	$3x - 0.05$	0.15

a) Find the probability of selecting a green counter **0.25**

b) You are told there are 18 purple counters in the bag. Find how many blue, green and red counters there are? **Red – 24, Blue – 48, Green - 30**

2. Different coloured Lego bricks are placed in a bag. The probabilities of getting each Lego brick is given.

Colour	Yellow	Green	Brown	Pink
Probability	$4x$	$5x + 0.02$	$3x$	0.26

a) Find the probability of selecting a brown Lego brick **0.18**

b) Given that there are 156 pink Lego bricks, how many bricks are there in total? **600**

3. Different coloured sponges are placed in a bag. The probabilities of getting each sponge is given. You are three times more likely to get a red sponge than a blue sponge

Colour	Blue	Red	Pink	Yellow
Probability	$3x + 0.08$		0.12	$2x$

a) Find the probability of selecting a yellow sponge **0.28**

b) Given that there are 24 pink sponges, how many sponges are there in total? **200**

4. A number of beetles are dipped in coloured paint and put into a jar. The probability of picking beetle with a certain colour is below. You are half as likely to get a blue beetle as you are a green beetle. You are 25% more likely to get gold beetle than a green one.

Colour	Green	Blue	Gold	Silver
Probability	$8x + 0.04$			0.01

a) Find the probability of getting a green beetle. **0.36**

b) Given that the probability of getting a Silver beetle is 0.01, what is the minimum amount of beetles in the bag? **100, as it is equal to 1/100. Anything smaller would end up giving part beetles.**

5. Mick's pantry is flooded and all the tins have their labels washed away. They are indistinguishable from one another. He has tins of beans, tomatoes, cat food and peaches. The probability of picking a tin of each type is given below.

Tin contents	Beans	Tomatoes	Cat Food	Peaches
Probability	$\frac{1}{3}$	$x + \frac{1}{10}$	$\frac{4}{15} - x$	$3x$

a) Find the probability of selecting tomatoes **or** peaches. **$0.36 = \frac{9}{25}$**

b) You are told that you have 4 more tins of tomatoes than cat food. How many tins do you have in total? **120 tins**

c) What is the minimum number of tins? Give a reason for your answer. **30 as it the lowest common denominators for the probabilities of the tins**

6. Bess, Cress, Jess and Tess are having a pumpkin carving competition. Tess has a one in five chance of winning. Cress has 5% less than double the chance Bess has of winning. Whilst Jess has the same chance of winning as Bess or Cress.

What is the probability of Bess winning the competition? **0.15**