

Probability – showing understanding

- (1) Brandon has some blue and some green beads in a bag. He selects a bead at random.
The probability that he selects a blue bead is $\frac{3}{7}$
The probability that he selects a green bead is $\frac{1}{4}$
- (a) List some of the options for the number of beads that Brandon has:
- (b) Write a condition for the number of beads, that fixes the total number of beads that Brandon has.
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- (2) Anya has some blue and green beads in a bag, She selects a bead at random.
The probability that she selects a blue bead is $\frac{x+4}{15}$
The probability that she selects a green bead is $\frac{2}{5}$
- (a) Find x

- (b) If she has 90 beads, how many does she have of each colour?
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- (3) Seth has a bag full of blue and green beads. He selects one at random, notes the colour and replaces it.
These are his results are 10, 20 , 50 and 100 trials.

Total	Blue	Green
10	7	3
20	15	5
50	35	15
100	74	26

Given there are 25 beads in the bag, estimate how many of each colour there are and justify your estimate.

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(4) Farhan and Oliver are playing a game with two five sided spinners.

Farhan spins the two spinners, finds the difference between the two numbers and squares this to find his score

(a) Calculate the probability that his score is greater than 4

Oliver spins the spinners and adds the two values together.

(b) Calculate the probability that Oliver's score is greater than or equal 4.

The winner is the person with the greater score

(c) Calculate

(i) $P(\text{Farhan wins})$

(ii) $P(\text{Oliver wins})$

(iii) $P(\text{The game is drawn})$

Probability - showing understanding

(5) A bag of beads contains red, yellow, blue and green beads in the ratio

$$x : 3x : 8 - 2x : 10 - 2x$$

(a) Calculate $P(R)$, $P(Y)$, $P(B)$ and $P(G)$ in terms of x , in their simplest terms.

Given that $P(G) = \frac{1}{3}$

(b) Calculate the smallest number of beads that could be in the bag, and how many of each colour this would mean there were.