

Mathematics

0580

Paper - 2

Probability

Exercise (M-19, M-18; S-19; S-18; W-18)

(with answers)

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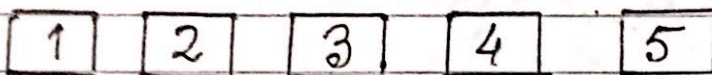
1 The probability that a sweet made in a factory is the wrong shape is 0.0028.

One day the factory makes 25000 sweets.

Calculate the number of sweets that are expected to be the wrong shape.

[M-19/22/Q6] --- [2]

2.



The diagram shows five cards.

Two of the cards are taken at random, without replacement.

Find the prob. that both cards show an even number. --- [2]

[S-19/21/Q11]

3. Samira and Sonia each have a bag containing 20 sweets.

In each bag, there are 5 red, 6 green and 9 yellow sweets.

(a) Samira chooses one sweet at random from her bag.

Write down the prob. that she chooses a yellow sweet. --- [1]

(b) Sonia chooses two sweets at random, without replacement, from her bag.

(i) Show that the prob. that she chooses two green sweets is $\frac{3}{38}$. --- [2]

(ii) Calculate the prob. the sweets she chooses are NOT both the same colour.

[M-18/22/Q22] --- [4]

4. (a) A box contains 3 blue pen, 4 red pen and 8 green pens only.

A pen is chosen from the box at random.

Find the prob. that this pen is green. --- [1]

(b) Another box contains 7 black pens and 8 orange pens only.

Two pens are chosen at random from this box without replacement.

--- [3]

Calculate the prob. that at least one orange pen is chosen.

[S-18/21/Q20]

5. Box A and Box B each contain blue and green pens only. Raphael picks a pen at random from box A and Paulo picks a pen at random from box B.

The prob. that Raphael picks a blue pen is $\frac{2}{3}$.

The prob. that both Raphael and Paulo pick a blue pen is $\frac{8}{15}$.

(a) Find the prob. that Paulo picks a blue pen. --- [2]

(b) Find the prob. that both Raphael and Paulo pick a green pen. --- [3]

[S-18/23/Q24]

6. The prob. that Kim wins a game is 0.72.

In one year Kim plays 225 games.

[S-18/23/Q7]

Work out an estimate of the number of games Kim will win. --- [2]

7. A group of 200 people were asked which city they would like to visit next. The table shows the results:

City	London	Paris	New York	Tokyo
Number of people	50	48	56	46

(a) A person from the group is chosen at random.

Write down the probability that this person would like to visit either Paris or Tokyo next. --- [2]

(b) Two people are chosen at random from the group of 200.

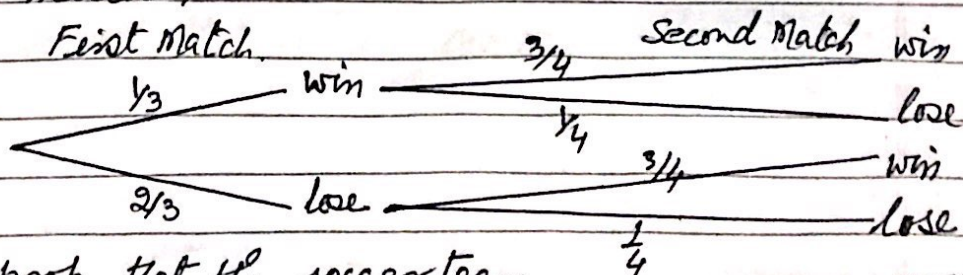
Find the prob. that one person would like to visit London next and other person would like to visit New York next.

Give your answer as a percentage.

[W-18/21/Q22] --- [3]

8. A soccer team plays two matches.

The tree diagram shows the prob. of the team winning or losing the matches.



Find the prob. that the soccer team wins at least one of the two matches. --- [3]

[SP-20/02/Q22]

Answers

1. 70

2. $\frac{1}{10}$

3. (a) $\frac{9}{20}$

(b)(i) $\frac{6}{20} \times \frac{5}{19} = \frac{3}{38}$ ✓

(ii) $\frac{258}{380}$ ✓

4. (a) $\frac{8}{15}$

(b) $\frac{168}{210}$

5. (a) $\frac{4}{5}$

(b) $\frac{1}{15}$

6. 162

7. (a) $\frac{94}{200}$

(b) 14.1.

8. $\frac{10}{12}$

