Exam Style Questions

Listing Outcomes

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser
You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don’t spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

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Video 253
1. A bag contains a green bead (G), a white bead (W) and a purple bead (P). A coin can land on tails (T) or heads (H).

A bead is chosen at random from the bag and the coin is flipped. One of the possible outcomes is a green bead and a tail (GT).

List all the other possible outcomes.

\[ GT, GH, WT, WH, PT, PH \]

2. Molly visits a restaurant with her friends.

This is a menu.

<table>
<thead>
<tr>
<th>Starters</th>
<th>Mains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soup</td>
<td>Chicken</td>
</tr>
<tr>
<td>Prawn Cocktail</td>
<td>Beef</td>
</tr>
<tr>
<td>Melon</td>
<td>Pizza</td>
</tr>
</tbody>
</table>

Molly chooses one starter and one main.

List all the possible combinations.

Soup & Chicken, Soup & Beef, Soup & Pizza
Prawn C & Chicken, Prawn C & Beef, Prawn C & Pizza
Melon & Chicken, Melon & Beef, Melon & Pizza
3. Micky goes to a coffee shop. He chooses one drink and one snack.

<table>
<thead>
<tr>
<th>Drink</th>
<th>Snack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tea</td>
<td>Muffin</td>
</tr>
<tr>
<td>Coffee</td>
<td>Brownie</td>
</tr>
<tr>
<td>Juice</td>
<td>Crisps</td>
</tr>
<tr>
<td></td>
<td>Pastry</td>
</tr>
</tbody>
</table>

Write down all the possible combinations.

- TM, TB, TC, TP
- CM, CB, CC, CP
- JM, JB, JC, JP

(2)

4. Oria has four types of vegetable.

- Peas
- Carrots
- Turnip
- Spinach

Oria is going to choose 2 different types of vegetable.

Write down all the possible combinations of vegetable she can choose.

- PC, PT, PS
- CT, CS
- TS

(2)
5. There are two bags.
   Each bag has three counters inside.

In bag 1, there is one red counter, one green counter and one pink counter.
In bag 2, there is one blue counter, one yellow counter and one red counter.

Rob takes a counter at random from bag 1 and a counter at random from bag 2.

(a) Write a list of all the possible combinations of the two counters that Rob can take.

\[
\text{RB, RY, RR, GB, GY, GR, PB, PY, PR} \]

\[\text{\underline{RB, RY, RR}}\]

\[\text{\underline{GB, GY, GR}}\]

\[\text{\underline{PB, PY, PR}}\]

(2)

(b) Find the probability that Rob takes two counters that are the same colour.

\[
\frac{1}{9}
\]

(1)
6. Magnus flips a fair coin once and rolls an ordinary six-sided die once.

(a) Write down all the possible outcomes.

\[ H_1, H_2, H_3, H_4, H_5, H_6 \]
\[ T_1, T_2, T_3, T_4, T_5, T_6 \]

\[ \text{(2)} \]

(b) Find the probability that Magnus gets a head and a 3.

\[ \frac{1}{12} \]

\[ \text{(1)} \]

7. Two coins are flipped.

List all possible outcomes. Use T for tails and H for heads.

\[ TT, TH, HT, HH \]

\[ \text{(2)} \]

8. Mohammad flips a fair coin and rolls a fair dice.

List all possible combinations

\[ H_1, H_2, H_3, H_4, H_5, H_6 \]
\[ T_1, T_2, T_3, T_4, T_5, T_6 \]

\[ \text{(2)} \]

(b) Find the probability that Mohammad gets a tail and a prime number.

\[ \frac{3}{12} = \frac{1}{4} \]

\[ \text{(1)} \]
9. William is going to attend a two-day summer camp at his local leisure centre. He can take part in one activity on Monday and one activity on Tuesday.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golf</td>
<td>Ice-skating</td>
</tr>
<tr>
<td>Football</td>
<td>Swimming</td>
</tr>
<tr>
<td>Rugby</td>
<td>Dodgeball</td>
</tr>
<tr>
<td>Hockey</td>
<td>Basketball</td>
</tr>
</tbody>
</table>

List all the possible combinations of activities he can take part in:
- GI, GS, GD, GB
- FI, FS, FD, FB
- RI, RS, RD, RB
- HI, HS, HD, HB
10. Sarah has made up a game for a school fayre to raise money for charity. There are two boxes of counters. Each counter has a number on it.

The person playing the game will select one counter at random from box 1. Then they will select one counter at random from box 2.

(a) Write down all the possible combinations of counters picked.

4&5, 4&2, 4&1, 4&3
5&5, 5&2, 5&1, 5&3
8&5, 8&2, 8&1, 8&3

(b) Work out how much money Sarah raises for charity.

\[ P(10) = \frac{6}{12} = \frac{1}{2} \]
\[ 240 \times £1 = £240 \text{ (earnings)} \]
\[ \frac{1}{6} \text{ of } 240 = 60 \]
\[ 60 \times 2.5 = £150 \text{ (prizes)} \]
\[ £240 - £150 = £90 \text{ (profit)} \]
11. Megan is having a meal with her friends. She is going to choose one starter, one main and one dessert. This is the menu.

<table>
<thead>
<tr>
<th>Starter</th>
<th>Main</th>
<th>Dessert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soup</td>
<td>Chicken</td>
<td>Trifle</td>
</tr>
<tr>
<td>(£2.50)</td>
<td>(£6.25)</td>
<td>(£3.50)</td>
</tr>
<tr>
<td>Prawns</td>
<td>Beef</td>
<td>Brownie</td>
</tr>
<tr>
<td>(£4.25)</td>
<td>(£8.00)</td>
<td>(£4.00)</td>
</tr>
<tr>
<td>Melon</td>
<td>Pork</td>
<td>Eton Mess</td>
</tr>
<tr>
<td>(£3.50)</td>
<td>(£7.50)</td>
<td>(£4.50)</td>
</tr>
</tbody>
</table>

Megan has £15. Let all the possible combinations that Megan can afford.

SCT, SCB, SCE
SBT, SBB, SBE
SPT, SPB, SPE
PCT, PCB, PCE
MCT, MCB, MCE
MBT
MPT, MPB