

LISTING POSSIBLE OUTCOMES

FOUNDATION / HIGHER TIER



Attempt the paper before watching the solutions!

<https://www.youtube.com/@JPMathsRevision>

Name: _____

Date: _____

1. A restaurant offers the following choices:

Starters:

- Soup
- Garlic Bread
- Salad

Main Courses:

- Pizza
- Pasta
- Burger

List all the possible combinations of one starter and one main course.

- | | |
|---------------------------|-----------------------------------|
| 1. <u>Soup and Pizza</u> | 4. <u>Garlic Bread and Pasta</u> |
| 2. <u>Soup and Pasta</u> | 5. <u>Garlic Bread and Burger</u> |
| 3. <u>Soup and Burger</u> | 6. <u>Salad and Burger</u> |

(2 marks)

2. A fair coin is flipped and a fair six-sided dice is rolled.
List 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) |

(2 marks)

3. A fair coin is flipped twice.
List all the possible outcomes.

- | | |
|--------------|--------------|
| 1. <u>HH</u> | 3. <u>TH</u> |
| 2. <u>HT</u> | 4. <u>TT</u> |

(2 marks)

4. A spinner has four equal sections labelled 1, 2, 3 and 4.
The spinner is spun twice.

- (a) List all the possible outcomes.

- | | | | |
|--------|--------|--------|--------|
| (1, 1) | (1, 2) | (1, 3) | (1, 4) |
| (2, 1) | (2, 2) | (2, 3) | (2, 4) |
| (3, 1) | (3, 2) | (3, 3) | (3, 4) |
| (4, 1) | (4, 2) | (4, 3) | (4, 4) |

- (b) What is the probability that the total is 5? $\frac{3}{16}$

- (c) What is the probability that the same number is obtained both times? $\frac{1}{4}$ (6 marks)

5. Three number cards are shown:



A two-digit number is made using two different cards.
Write down all the possible two-digit numbers.

- | | | |
|-----------|-----------|-----------|
| <u>25</u> | <u>27</u> | <u>52</u> |
| <u>57</u> | <u>72</u> | <u>75</u> |

(2 marks)

6. Four number cards are shown:



A three-digit number is made using three different cards.
Write down all the possible three-digit numbers.

- | | | | | | |
|------------|------------|------------|------------|------------|------------|
| <u>124</u> | <u>126</u> | <u>142</u> | <u>146</u> | <u>162</u> | <u>164</u> |
| <u>214</u> | <u>216</u> | <u>241</u> | <u>246</u> | <u>261</u> | <u>264</u> |
| <u>412</u> | <u>416</u> | <u>421</u> | <u>426</u> | <u>461</u> | <u>462</u> |
| <u>612</u> | <u>614</u> | <u>621</u> | <u>624</u> | <u>641</u> | <u>642</u> |

(2 marks)

7. Four number cards are shown:



Two cards are picked at random without replacement and the numbers are added together.
What is the probability that the total is odd?

$\frac{1}{2}$

(4 marks)

8. Four number cards are shown:



Two cards are picked at random without replacement and the numbers are added together.
What is the probability that the total is even?

$\frac{1}{2}$

(4 marks)

