

Workout

Question 1:

(a) 7

(b) 2 and 12

(c) (i) $2/36$ ($1/18$) (ii) $4/36$ ($1/9$) (iii) $5/36$ (iv) $6/36$ ($1/6$)

(d) (i) $3/36$ ($1/12$) (ii) $15/36$ ($5/12$) (iii) $6/36$ ($1/6$) (iv) $26/36$ ($13/18$)

(e) (i) $18/36$ ($1/2$) (ii) $7/36$ (iii) $15/36$ ($5/12$)

Question 2 (a):

| | | Dice 1 | | | | | |
|--------|---|--------|----|----|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| Dice 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 |
| | 2 | 2 | 4 | 6 | 8 | 10 | 12 |
| | 3 | 3 | 6 | 9 | 12 | 15 | 18 |
| | 4 | 4 | 8 | 12 | 16 | 20 | 24 |
| | 5 | 5 | 10 | 15 | 20 | 25 | 30 |
| | 6 | 6 | 12 | 18 | 24 | 30 | 36 |

2(b): (i) $2/36$ ($1/18$) (ii) $1/36$ (iii) $4/36$ ($1/9$) (iv) $2/36$ ($1/18$)

(c) (i) $27/36$ ($3/4$) (ii) $9/36$ ($1/4$) (iii) $28/36$ ($7/9$)

Question 3 (a):

| | | Bag 1 | | |
|-------|---|-------|---|----|
| | | 1 | 2 | 5 |
| Bag 2 | 2 | 2 | 4 | 10 |
| | 3 | 3 | 6 | 15 |
| | 4 | 4 | 8 | 20 |

(b) $1/9$

(c) $4/9$

(d) $2/9$

Question 4(a):

| | | Dice | | | | | |
|------|-------|------|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| Coin | Heads | 0 | 1 | 2 | 3 | 4 | 5 |
| | Tails | 3 | 4 | 5 | 6 | 7 | 8 |

(b) $1/12$

(c) $2/12$ ($1/6$)

(d) $5/12$

(e) $3/12$

Question 5(a):

| | | Spinner 1 | | | |
|-----------|---|-----------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| Spinner 2 | 1 | 0 | 1 | 2 | 3 |
| | 2 | 1 | 0 | 1 | 2 |
| | 3 | 2 | 1 | 0 | 1 |

(b) $5/12$

(c) $4/12$ ($1/3$)

Apply

Question 1(a):

| | | Spinner 1 | | |
|-----------|---|-----------|----|----|
| | | 2 | 5 | 8 |
| Spinner 2 | 3 | 5 | 8 | 11 |
| | 4 | 6 | 9 | 12 |
| | 7 | 9 | 12 | 15 |

(b) The probability of an even score is $4/9$

Question 2(a):

(a) Rule 1 is square the number on the spinner

(b) Rule 2 is double the number on the spinner and add 1.

(c) The missing number is 16

(d) $6/8$ ($3/4$)

Question 3:

| | | Dice 1 | | | | | |
|--------|---|--------|----|----|----|----|----|
| x | | 1 | 2 | 3 | 4 | 5 | 6 |
| Dice 2 | 1 | 1 | 2 | 3 | 4 | 5 | 6 |
| | 2 | 2 | 4 | 6 | 8 | 10 | 12 |
| | 3 | 3 | 6 | 9 | 12 | 15 | 18 |
| | 4 | 4 | 8 | 12 | 16 | 20 | 24 |
| | 5 | 5 | 10 | 15 | 20 | 25 | 30 |
| | 6 | 6 | 12 | 18 | 24 | 30 | 36 |

$$P(\text{square number}) = 8/36 = 4/18 = 2/9$$

40 winners ($40 \times \text{£}3 = \text{£}120$)

$$\text{£}180 - \text{£}120 = \text{£}60$$

Question 4: $8/12$ ($2/3$)

Question 5: $21/36$ ($7/12$)

| | 1 | 1 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 2 | 3 | 4 | 5 |
| 1 | 2 | 2 | 2 | 3 | 4 | 5 |
| 1 | 2 | 2 | 2 | 3 | 4 | 5 |
| 2 | 3 | 3 | 3 | 4 | 5 | 6 |
| 3 | 4 | 4 | 4 | 5 | 6 | 7 |
| 4 | 5 | 5 | 5 | 6 | 7 | 8 |

Question 6: $6/36$ ($1/6$)