

Kansen oefening 1 antwoorden

1. X p

$$0 \quad \frac{\binom{48}{6} \binom{4}{0}}{\binom{52}{6}} = 0,6028$$

$$1 \quad \frac{\binom{4}{1} \binom{48}{5}}{\binom{52}{6}} = 0,3364$$

$$2 \quad \frac{\binom{4}{2} \binom{48}{4}}{\binom{52}{6}} = 0,0573$$

$$3 \quad \frac{\binom{4}{3} \binom{48}{3}}{\binom{52}{6}} = 0,0034$$

$$4 \quad \frac{\binom{4}{4} \binom{48}{2}}{\binom{52}{6}} = 0,0001$$

$$E(X) = 0,46$$

2.

| | | | | | | |
|---|---|---|----|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | 1 | 2 | 3 | 4 | 5 | 6 |

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

Som S

Grootste G

| S | p |
|----|-----------------|
| 2 | $1/36 = 0,0278$ |
| 3 | $2/36 = 0,0556$ |
| 4 | $3/36 = 0,0833$ |
| 5 | $3/36 = 0,0833$ |
| 6 | $4/36 = 0,1111$ |
| 7 | $5/36 = 0,1389$ |
| 8 | $5/36 = 0,1389$ |
| 9 | $4/36 = 0,1111$ |
| 10 | $3/36 = 0,0833$ |
| 11 | $3/36 = 0,0833$ |
| 12 | $2/36 = 0,0556$ |
| 13 | $1/36 = 0,0278$ |

$$E(S) = 7,5$$

| G | p |
|---|------------------|
| 1 | $1/36 = 0,0278$ |
| 2 | $3/36 = 0,0833$ |
| 3 | $5/36 = 0,1389$ |
| 4 | $3/36 = 0,0833$ |
| 5 | $8/36 = 0,2222$ |
| 6 | $10/36 = 0,2778$ |
| 7 | $6/36 = 0,1667$ |

$$E(G) = 4,89$$

3.

| X | p |
|---|------|
| 2 | 0,38 |
| 3 | 0,44 |
| 4 | 0,18 |

$$P(\text{A wint in 2}) = 0,2 \times 0,2 = 0,04$$

$$P(\text{B wint in 2}) = 0,3 \times 0,3 = 0,09$$

$$P(\text{C wint in 2}) = 0,5 \times 0,5 = 0,25$$

$$P(\text{A wint in 3}) = 0,2 \times 0,2 \times 0,3 \times 2 + 0,2 \times 0,2 \times 0,5 \times 2 = 0,064$$

$$P(\text{B wint in 3}) = 0,3 \times 0,3 \times 0,2 \times 2 + 0,3 \times 0,3 \times 0,5 \times 2 = 0,126$$

$$P(\text{C wint in 3}) = 0,5 \times 0,5 \times 0,2 \times 2 + 0,5 \times 0,5 \times 0,3 \times 2 = 0,25$$

$$E(X) = 2,8$$

4.

| X | p |
|---|---|
| 0 | $4/5^4 = 0,4096$ |
| 1 | $4/5^3 \times 1/5 \times 4 = 0,4096$ |
| 2 | $4/5^2 \times 1/5^2 \times 6 = 0,02048$ |
| 3 | $4/5 \times 1/5^3 \times 4 = 0,0256$ |
| 4 | $1/5^4 = 0,0016$ |

$$E(X) = 0,53376$$