

1.4 Answers

GCSE Mathematics Probability

1.4.1 Solution (Introductory Example)

- (i) $\frac{1}{12}$ (ii) 4, 8, 12
 $\frac{3}{12}$ or $\frac{1}{4}$
- (iii) 1, 2, 3, 4, 6, 12 (iv) 2, 3, 5, 7, 11
 $\frac{6}{12}$ or $\frac{1}{2}$ $\frac{5}{12}$
- (v) $\frac{0}{12}$ or 0 (vi) 11, 12
 $\frac{2}{12}$ or $\frac{1}{6}$

$$\frac{1}{12} \times 144 = 12 \text{ times}$$

1.4.2 Solution (Exercise)

Answer 1

- (i) $\frac{1}{20}$ (ii) 5, 10, 15, 20
 $\frac{4}{20}$ or $\frac{1}{5}$
- (iii) 1, 2, 4, 5, 10, 20 (iv) 2, 3, 5, 7, 11, 13, 17, 19
 $\frac{6}{20}$ or $\frac{3}{10}$ $\frac{8}{20}$ or $\frac{2}{5}$
- (v) 1, 4, 9, 16 (vi) 18, 19, 20
 $\frac{4}{20}$ or $\frac{1}{5}$ $\frac{3}{20}$

$$\frac{1}{2} \times 144 = 72 \text{ times}$$

Answer 2

- (i) $\frac{5}{8}$ (ii) $\frac{1}{8}$ (iii) $\frac{6}{8}$ or $\frac{3}{4}$

Answer 3

- (i) $\frac{6}{15}$ or $\frac{2}{5}$ (ii) $\frac{14}{15}$ (iii) $\frac{15}{15}$ or 1

Answer 4

- (i) $\frac{1}{11}$ (ii) $\frac{2}{11}$ (iii) $\frac{4}{11}$ (iv) $\frac{10}{11}$

Answer 5

$\frac{35}{49}$ which cancels down to $\frac{5}{7}$

Answer 6

$\frac{400}{10\,000\,000}$ which cancels down to $\frac{1}{25\,000}$

Answer 7

- (i) $\frac{1}{6}$ (ii) $\frac{3}{6}$ or $\frac{1}{2}$ (iii) 0
- (iv) $\frac{2}{6}$ or $\frac{1}{3}$ (v) $\frac{4}{6}$ or $\frac{2}{3}$ (vi) 1
- (vii) 1, 3, 6
 $\frac{3}{6}$ or $\frac{1}{2}$

Answer 8

- (i) $\frac{1}{12}$ (ii) $\frac{2}{12}$ or $\frac{1}{6}$ (iii) $\frac{3}{12}$ or $\frac{1}{4}$
- (iv) $\frac{6}{12}$ or $\frac{1}{2}$ (v) $\frac{7}{12}$

Answer 9

Heads once, tails twice can occur in three ways when the order does not matter. As eight possibilities exist, all equally likely, the probability of heads once, tails twice occurring is $\frac{3}{8}$

H H H

H H T
H T H
T H H

T T H
T H T
H T T

T T T