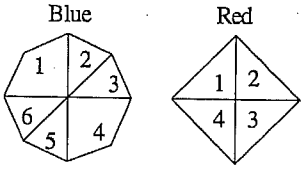
Revision & Practice W sheet 39

A Chance and data: Probability of multiple independent events

Skill 9.10

1 Each of these spinners is spun once. Find the probability of:



(a) Spinning each number on the blue spinner
(b) spinning each number on the red spinner
(c) spinning two 1's
(d) spinning two 2's
(e) spinning two 3's
(f) spinning two 4's
(g) spinning two even numbers
(h) spinning two odd numbers

2 A bag contains 3 red and 4 blue balls. A ball is selected and its colour noted and then it is replaced. This process occurs two more times. Find the probability that:

(a) All the balls are red
(b) all the balls are blue
(c) the balls are chosen in the order red, blue, red
(d) one ball is red and the other two are blue

B Chance and data: Probability of multiple dependent events

Skill 9.11

A bag contains 7 red balls, 5 blue balls and 3 white balls. A ball is selected at random and kept out of the bag. This process continues another two times.

Find the probability of selecting:

1 Three red balls
2 three blue balls
3 three white balls
4 red, blue and white in that order
5 red, red then white in that order
6 three difference coloured balls in any order *
7 two red and a white ball in any order *

(*List the orders to help work it out.)

C Calculators: Scientific notation

Skill 10.6

Calculate:

1 $3.07 \times 10^9 \times 6.03 \times 10^{12}$
2 $5.097 \times 10^{12} \times 3 \times 10^{-13}$
3 $9.07 \times 10^6 \div 5 \times 10^{-14}$
4 $1.02 \times 10^3 \times 6.03 \times 10^{12}$
5 $1.83 \times 10^{12} + 1.58 \times 10^{11}$
6 $8.04 \times 10^{13} - 6.04 \times 10^{12}$
7 $1.381 \times 10^{-11} + 4.9 \times 10^{-12}$
8 $1.581 \times 10^{14} - 3.81 \times 10^{12}$
9 $1.6 \times 10^{15} + 3.8 \times 10^{13}$
10 $1.48 \times 10^{17} - 3.81 \times 10^{15}$
11 $3.81 \times 10^{10} \times 3.9 \times 10^{-13}$
12 $7.07 \times 10^{11} \div 2 \times 10^{15}$

D Calculator: Reciprocals

Skill 10.7

1 Find the reciprocal of these numbers to 3 decimal places:

(a) 15
(b) –16.3
(c) 4.09
(d) 1.083
(e) –5.3

2 Use the reciprocal function to help calculate these to 3 decimal places:

(a) $\dfrac{5}{6+2\pi}$
(b) $\dfrac{\sqrt{2}}{5-2\sqrt{11}}$
(c) $\dfrac{5\pi}{7(2+\pi)}$
(d) $\dfrac{8}{\pi+\sqrt{8}}$
(e) $\dfrac{\sqrt{2}}{5+\pi+11.8}$
(f) $\dfrac{12}{3\pi+\sqrt{17}}$
(g) $\dfrac{2}{16\left(3\sqrt{2}+\pi\right)}$

E Calculators: Trigonometric functions

Skill 10.8

Find the angles expressed in degree/min form:

1 $\sin a = 0.2138$
2 $\cos a = 0.1238$
3 $\tan a = 1.2148$
4 $\cos a = 0.0314$
5 $\sin a = 0.1318$
6 $\tan a = 2.0314$
7 $\cos a = 0.6214$
8 $\sin a = 0.2643$
9 $\tan a = 6.3142$
10 $\sin a = 0.8142$
11 $\cos a = 0.4104$
12 $\tan a = 0.2314$

Worksheet 39

A 1 (a) Blue spinner

Number	1	2	3	4	5	6
Probability	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$

(b) Red spinner

Number	1	2	3	4
Probability	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

(c) $\frac{1}{16}$ (d) $\frac{1}{32}$ (e) $\frac{1}{32}$ (f) $\frac{1}{16}$
(g) $\frac{1}{4}$ (h) $\frac{1}{4}$

2 (a) $\frac{27}{343}$ (b) $\frac{64}{343}$ (c) $\frac{36}{343}$ (d) $\frac{144}{343}$

B 1 $\frac{1}{13}$ **2** $\frac{2}{91}$ **3** $\frac{1}{455}$ **4** $\frac{1}{26}$
5 $\frac{3}{65}$ **6** $\frac{3}{13}$ **7** $\frac{9}{65}$

C 1 $1.851\,21 \times 10^{22}$ **2** 1.5291
3 1.814×10^{20} **4** 6.1506×10^{15}
5 1.988×10^{12} **6** 7.436×10^{13}
7 1.871×10^{-11} **8** 1.5429×10^{14}
9 1.638×10^{15} **10** 1.4419×10^{17}
11 0.014 859 **12** 3.535×10^{-4}

D 1 (a) 0.067 (b) −0.061 (c) 0.244
(d) 0.923 (d) −0.189
2 (a) 0.407 (b) −0.866 (c) 0.436
(d) 1.340 (e) 0.071 (f) 0.886
(g) 0.017

E 1 12°21' **2** 82°53' **3** 50°32'
4 88°12' **5** 7°34' **6** 63°47'
7 51°35' **8** 15°20' **9** 81°0'
10 54°31' **11** 65°46' **12** 13°2'