



1. Kebarangkalian eksperimen bagi suatu peristiwa =
The experimental probability of an event

Kekerapan berlakunya peristiwa
Frequency of an event

Bilangan cubaan
Number of trials

2.

Bilangan putaran Number of rotations	Keputusan yang diperoleh Results obtained				Kebarangkalian eksperimen mendapat Experimental probability of getting			
	P	Q	R	S	P	Q	R	S
40	8	11	12	9	$\frac{8}{40} = 0.2$	$\frac{11}{40} = 0.275$	$\frac{12}{40} = 0.3$	$\frac{9}{40} = 0.225$
100	23	26	27	24	$\frac{23}{100} = 0.23$	$\frac{26}{100} = 0.26$	$\frac{27}{100} = 0.27$	$\frac{24}{100} = 0.24$
8 000	1 990	2 015	2 020	1 975	$\frac{1\,990}{8\,000} = 0.249$	$\frac{2\,015}{8\,000} = 0.252$	$\frac{2\,020}{8\,000} = 0.253$	$\frac{1\,975}{8\,000} = 0.247$

3. (a) (i) $S = \left\{ \begin{array}{l} \text{Januari, Februari, Mac, April,} \\ \text{Mei, Jun, Julai, Ogos, September,} \\ \text{Oktober, November, Disember} \end{array} \right\}$

$$S = \left\{ \begin{array}{l} \text{January, February, March, April, May,} \\ \text{June, July, August, September, October,} \\ \text{November, December} \end{array} \right\}$$

(ii) $n(S) = 12$

(iii) $Z = \left\{ \begin{array}{l} \text{Januari, Mac, Mei, Julai, Ogos,} \\ \text{Oktober, Disember} \end{array} \right\}$

$$Z = \left\{ \begin{array}{l} \text{January, March, May, July,} \\ \text{August, October, December} \end{array} \right\}$$

(b) (i) $S = \{M, U, J, A, H, I, D\}$

(ii) $n(S) = 7$

(iii) $Z = \{M, J, H, D\}$

(c) (i) $S = \{5, 10, 15, 20, 25, 30, 35, 40, 45\}$

(ii) $n(S) = 9$

(iii) $Z = \{15, 30, 45\}$

(d) (i) $S = \left\{ \begin{array}{l} \text{Merah, Jingga, Kuning, Hijau,} \\ \text{Biru, Indigo, Ungu} \end{array} \right\}$

$$\left\{ \begin{array}{l} \text{Red, Orange, Yellow, Green, Blue,} \\ \text{Indigo, Purple} \end{array} \right\}$$

(ii) $n(S) = 7$

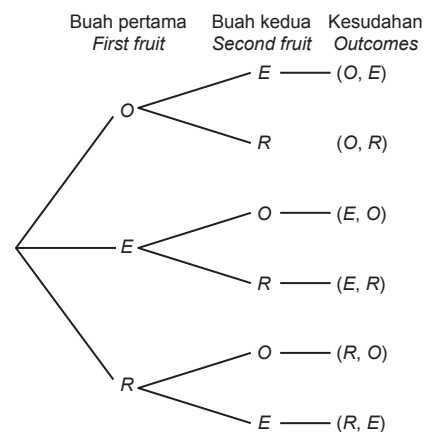
(iii) $Z = \{\text{Merah, Kuning, Biru}\}$
 $\{\text{Red, Yellow, Blue}\}$

(e) (i) $S = \{10, 11, 12, 13, 14, 15, 16, 17, 18, 19\}$

(ii) $n(S) = 10$

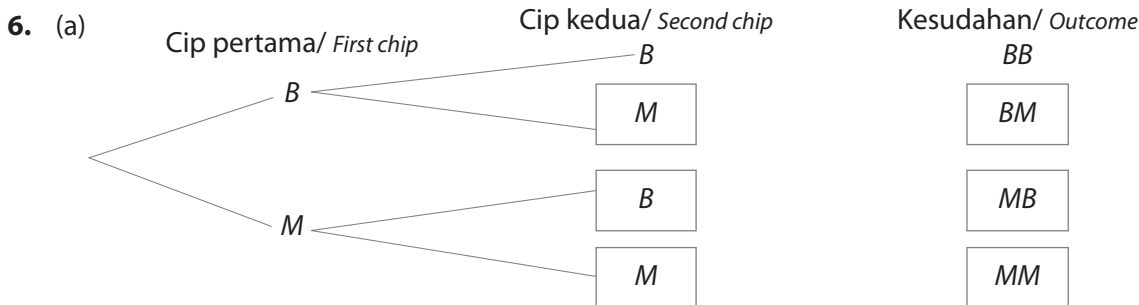
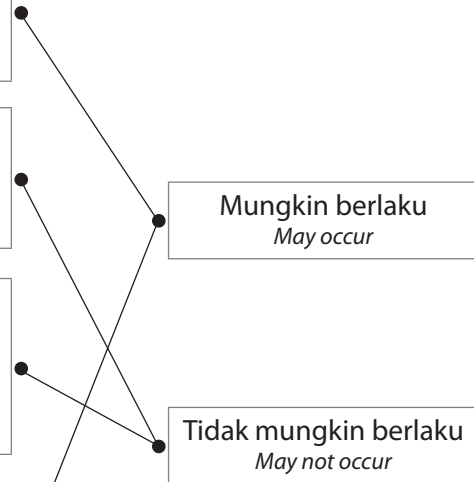
(iii) $Z = \{10, 12, 14, 16, 18\}$

4. (a) O: Oren, E: Epal, R: Rambutan
O: Orange, E: Apple, R: Rambutan



Ruang sample / Sample space,
= $\{(O, E), (O, R), (E, O), (E, R), (R, O), (R, E)\}$

5. Bilangan hari dalam sebulan.
The number of days in a month.
 Peristiwa A: Bilangan hari dalam sebulan ialah 29 hari.
Event A: The number of days in a month is 29 days.
- Seorang murid menduduki ujian Matematik.
A student is sitting for a Mathematics exam.
 Peristiwa B: Murid tersebut mendapat markah 120%.
Event B: The student scores 120% marks.
- Suresh memandu keretanya dari Johor Bahru ke Kuala Lumpur.
Suresh drives his car from Johor Bahru to Kuala Lumpur.
 Peristiwa C: Dia tiba di Kuala Lumpur dalam masa satu jam setengah.
Event C: He arrived in Kuala Lumpur in 1 hour and a half.
- Sebiji buah epal telah jatuh dari sepohon pokok.
An apple fell from a tree.
 Peristiwa D = epal itu akan rosak.
Event D = the apple will spoil.



- (b) $P(BB) = \frac{1}{4} = 0.25$ $P(BM) = \frac{1}{4} = 0.25$ $P(MB) = \frac{1}{4} = 0.25$ $P(MM) = \frac{1}{4} = 0.25$
- (c) $P(BB) = \frac{7}{40} = 0.175$ $P(BM) = \frac{10}{40} = 0.25$ $P(MB) = \frac{12}{40} = 0.3$ $P(MM) = \frac{11}{40} = 0.275$
- (d) Kebarangkalian eksperimen mungkin sama atau tidak sama dengan kebarangkalian teori. Apabila bilangan cubaan cukup besar, kebarangkalian eksperimen akan menghampiri kebarangkalian teori.
The experimental probability may or may not be the same as the theoretical probability. When the number of trials is large enough, the experimental probability will become closer to the theoretical probability.

7. (a) $n(S) = 16$
 A = Peristiwa memilih kad dengan faktor 32
A = Event of choosing a card with factor of 32
 Faktor 32/ Factors of 32:
 1, 2, 4, 8, 16, 32
 $P(A) = \frac{2}{16}$
 $= \frac{1}{8}$
- (b) (i) $P(A) = \frac{48}{125} \times 100$
 $= 38.4\%$
 (ii) $P(A) = \frac{45}{125} \times 100$
 $= 36\%$

- (c) A = Peristiwa melakukan rondaan
A = Event of conducting patrols
 Bilangan rondaan dilakukan dalam 5 hari
Number of patrols conducted in 5 days
 $= \frac{1}{4} \times 24 \text{ jam} \times 5 \text{ hari}$
 $= \frac{1}{4} \times 24 \text{ hours} \times 5 \text{ days}$
 $= 30$
 $P(A) = \frac{30}{24 \times 5}$
 $= \frac{1}{4}$

8.

Peristiwa Event	Peristiwa pelengkap dalam perkataan Complement of event in words	Peristiwa pelengkap menggunakan tataanda set Complement of event using set notation
A = Peristiwa nombor yang diperoleh ialah nombor perdana apabila sebiji dadu adil dilambungkan. A = Event that the number obtained is a prime number when a fair dice is tossed.	A' = Peristiwa nombor yang diperoleh bukan nombor perdana apabila sebiji dadu adil dilambungkan. A' = Event that the number obtained is not a prime number when a fair dice is tossed.	A' = {1, 4, 6}
E = Peristiwa menjawab D dalam satu soalan objektif dengan 4 pilihan jawapan, A, B, C dan D secara rawak. E = Event of answering D in an objective question with 4 options A, B, C and D at random.	E' = Peristiwa menjawab bukan D. E' = Event of answering not D.	E' = {A, B, C}
F = Peristiwa memilih satu bulan bermula dengan huruf konsonan secara rawak. F = Event of choosing a month starts with consonant at random.	F' = Peristiwa memilih satu bulan bermula dengan huruf vokal. F' = Event of choosing a month starts with vowel.	F' = {April, Ogos, Oktober} F' = {April, August, October}

9.

Eksperimen / Experiment	Kebarangkalian / Probability	
Sebiji dadu dilambungkan. A dice is tossed.	P(nombor 5 diperoleh) P(number 5 is obtained) $= \frac{1}{6}$	P(nombor selain daripada 5) P(numbers other than 5) $= 1 - \frac{1}{6}$ $= \frac{5}{6}$
Dalam suatu latihan menembak, tembakkan Amir kena sasaran sebanyak 8 kali daripada 20 cubaan. In a shooting training, Amir hit the target 8 times out of 20 trials.	P(kena sasaran) P(hit the target) $= \frac{8}{20}$ $= \frac{2}{5}$	P(tidak kena sasaran) P(did not hit the target) $= 1 - \frac{2}{5}$ $= \frac{3}{5}$
Sebuah bas mempunyai 18 orang penumpang perempuan dan 9 orang penumpang lelaki. Seorang penumpang dipilih secara rawak. A bus has 18 female passengers and 9 male passengers. A passenger is chosen randomly.	P(memilih penumpang lelaki) P(choosing a male passenger) $= \frac{9}{27}$ $= \frac{1}{3}$	P(memilih penumpang perempuan) P(choosing a female passenger) $= 1 - \frac{1}{3}$ $= \frac{2}{3}$

10. (a) (i) Jumlah murid
Total number of students
 $= 16 + 8 + 8 + 16 + 12 + 8 + 20 + 12$
 $= 100$

Jumlah murid lelaki
Total number of boys
 $= 16 + 8 + 12 + 20$
 $= 56$

P(murid lelaki dipilih)
P(a boy is chosen)
 $= \frac{56}{100}$
 $= \frac{14}{25}$

- (ii) Bilangan murid dari Kelas Cerdas

Number of students from Class Cerdas

$$= 12 + 8$$

$$= 20$$

P(murid yang dipilih adalah dari Kelas Cerdas)

P(the student chosen is from Class Cerdas)

$$= \frac{20}{100}$$

$$= \frac{1}{5}$$

P(murid yang dipilih bukan dari Kelas Cerdas)

P(the student chosen is not from Class Cerdas)

$$= 1 - \frac{1}{5}$$

$$= \frac{4}{5}$$

- (b) P(surat khabar tidak mencapai kualiti piawai)

P(copies that are not achieved standard quality)

$$= \frac{3}{200} = 0.015$$

Bilangan naskhah surat khabar yang dijangka tidak mencapai kualiti piawai

Number of copies that are expected do not achieve the standard quality

$$= 0.015 \times 5\,000$$

$$= 75 \text{ naskhah/ copies}$$

- (c) Bilangan calon lelaki setelah jawatan X diisi

Number of male candidates after vacancy X has been filled

$$= 12 - 1$$

$$= 11$$

Kebarangkalian calon lelaki dipilih untuk mengisi jawatan Y

Probability that a male candidate is chosen to fill vacancy Y

$$= \frac{11}{11 + 10}$$

$$= \frac{11}{21}$$

Praktis Masteri 13

BAHAGIAN A

1. Kesudahan yang mungkin / Possible outcome
 $\{3, 5\}, \{3, 7\}, \{5, 7\}$

Jawapan / Answer: **C**

2. P(bukan bola berwarna biru) / P(not a blue ball)

$$= 1 - \frac{4}{14}$$

$$= \frac{5}{7}$$

Jawapan / Answer: **B**

3. P(pen hitam) / P(black pens)

$$= \frac{10}{5 + 10 + 3}$$

$$= \frac{10}{18}$$

$$= \frac{5}{9}$$

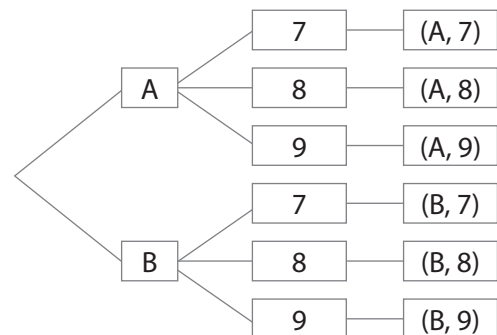
Jawapan / Answer: **C**

BAHAGIAN B

4. Kotak P
Box P

Kotak Q
Box Q

Kesudahan
Outcomes



- 5.
- | | |
|--|----------|
| Kedua-dua kemeja berwarna putih.
<i>Both shirts are white.</i> | X |
| Kedua-dua kemeja bukan berwarna putih.
<i>Both shirts are not white.</i> | X |
| Satu kemeja berwarna putih dan satu lagi bukan berwarna putih.
<i>One shirt is white, and another one is not white.</i> | ✓ |
| Hanya satu sahaja kemeja diambil.
<i>Only one shirt was taken.</i> | X |

BAHAGIAN C

6. (a) (i) $S = \{(12, R), (12, S), (12, T), (6, S), (6, T), (6, R), (9, R), (9, S), (9, T)\}$

$$(ii) P(A) = \frac{n(A)}{n(s)} = \frac{2}{9}$$

- (b) (i) Kebarangkalian mengambil sebiji mangga yang tidak rosak

The probability of picking a non-rotten mango

$$= 1 - \frac{2}{6} = \frac{2}{3}$$

- (ii) Jumlah mangga dalam sebuah bakul

Total number of mangoes in a basket

$$\frac{28}{x} = \frac{2}{3}$$

$$2x = 84$$

$$x = 42$$

Bilangan mangga rosak dalam sebuah bakul

Number of rotten mangoes in a basket

$$= 42 - 28$$

$$= 14$$

Jumlah mangga rosak dalam 4 bakul serupa

Total number of rotten mangoes in 4 similar baskets

$$= 14 \times 4$$

$$= 56$$

(c) (i) Kebarangkalian / Probability

$$= \frac{35}{25 + 35}$$

$$= \frac{35}{60}$$

$$= \frac{7}{12}$$

(ii) Kebarangkalian / Probability

$$= \frac{4 + 25}{25 + 35 + 6 + 4}$$

$$= \frac{29}{70}$$

Fokus KBAT

1. Katakan $P(\text{manik merah}) = P(\text{manik biru}) = x$

Let $P(a \text{ red bead}) = P(a \text{ blue bead})$

$$P(\text{bukan manik hijau}) = \frac{5}{6}$$

$P(\text{not a green bead})$

$P(\text{manik merah}) + P(\text{manik biru}) + P(\text{manik kuning})$

$P(a \text{ red bead}) + P(a \text{ blue bead}) + P(a \text{ yellow bead})$

$$= \frac{5}{6}$$

$$x + x + \frac{1}{3} = \frac{5}{6}$$

$$2x = \frac{5}{6} - \frac{1}{3}$$

$$= \frac{1}{2}$$

$$x = \frac{1}{4}$$

Kebarangkalian bahawa manik biru dipilih ialah

$$\frac{1}{4}.$$

The probability that a blue bead is picked is $\frac{1}{4}$.

$$\begin{aligned} 2. \text{ (a) } P(\text{memperoleh nombor 2}) &= \frac{40^\circ}{360^\circ} \\ &P(\text{getting number 2}) \\ &= \frac{1}{9} \end{aligned}$$

(b) $P(\text{memperoleh nombor genap})$

$P(\text{getting an even number})$

$$\begin{aligned} &= \frac{40^\circ + 70^\circ + 40^\circ}{360^\circ} \\ &= \frac{5}{12} \end{aligned}$$