Jawapan

Praktis 2

Praktis Formatif

1 26 834 ≈ 26 800 (tiga angka bererti/*three significant figures*)
Jawapan/*Answer*: **A**

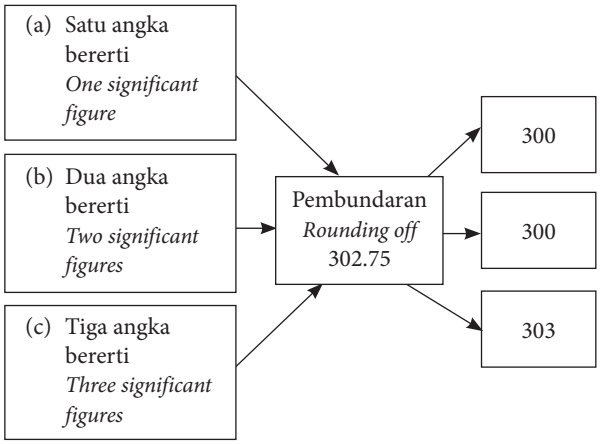
2 (a) 29.373 — 5 (c) 80 003 — 5
(b) 1.40 — 3 (d) 0.0006420 — 4

3

Nombor
Number

(a) Satu angka bererti *One significant figure*	(b) Dua angka bererti *Two significant figures*	(c) Tiga angka bererti *Three significant figures*
0.04	5.0	1.02
90	0.032	43.9
3	0.00063	0.00701
20 000	88	0.230

4



5 (a) 4 537 = 4 540 ✓
(3 angka bererti/*significant figures*)
(b) 70 062 = 70 060 ✓
(4 angka bererti/*significant figures*)
(c) 0.05128 = 0.05 ✗
(2 angka bererti/*significant figures*)
(d) 0.00066 = 0.00070 ✗
(1 angka bererti/*significant figure*)

6

Nombor *Number*	Satu angka bererti *One significant figure*	Tiga angka bererti *Three significant figures*
(a) 6.148	6	6.15
(b) 250.56	300	251
(c) 0.81974	0.8	0.820
(d) 0.004203	0.004	0.00420

7 **A**
$n = \frac{1}{2}$ bukan suatu integer
$n = \frac{1}{2}$ *is not an integer*
$\therefore 3 \times 10^{\frac{1}{2}}$ bukan dalam bentuk piawai.
$\therefore 3 \times 10^{\frac{1}{2}}$ *is not in standard form.*

B
$A = 40.2 > 10$
$\therefore 40.2 \times 10^5$ bukan dalam bentuk piawai.
$\therefore 40.2 \times 10^5$ *is not in standard form.*

C
$\frac{1}{2} < 1$
$\therefore \frac{1}{2} \times 10^{-2}$ bukan dalam bentuk piawai.
$\therefore \frac{1}{2} \times 10^{-2}$ *is not in standard form.*

D
$A = 9.6 > 10$ dan $n = -8$ ialah suatu integer
$A = 9.6 > 10$ *and* $n = -8$ *is an integer*
$\therefore 9.6 \times 10^{-8}$ adalah dalam bentuk piawai.
$\therefore 9.6 \times 10^{-8}$ *is in standard form.*
Jawapan/*Answer*: **D**

8 (a) $800 = 8 \times 10^2$
(b) $0.0063 = 6.3 \times 10^{-3}$
(c) $1\,724 = 1.724 \times 10^3$
(d) $0.00000591 = 5.91 \times 10^{-6}$

9 (a) $26 \times 10^2 = 2.6 \times 10^3$
(b) $154.8 \times 10^{-6} = 1.548 \times 10^{-4}$
(c) $0.032 \times 10^7 = 3.2 \times 10^5$
(d) $0.00045 \times 10^{-3} = 4.5 \times 10^{-7}$

10

12	as	400 000	as	0.9	as	0.00064
1.2×10^1		4×10^5		9×10^{-1}		6.4×10^{-4}

11 (a) $13\,600 = 14\,000$
$= 1.4 \times 10^4$

(b) $705\,800 = 700\,000$
$= 7 \times 10^5$

(c) $0.04296 = 0.0430$
$= 4.30 \times 10^{-2}$

(d) $0.00000287 = 0.0000029$
$= 2.9 \times 10^{-6}$

12 (a) $584 + 6\,103 = 6\,687$
$= 6.687 \times 10^3$

(b) $0.46 - 0.0007 = 0.4593$
$= 4.593 \times 10^{-1}$

(c) $320 \times 80 = 25\,600$
$= 2.56 \times 10^4$

(d) $0.12 \div 2\,400 = 0.00005$
$= 5 \times 10^{-5}$

13 (a) $2 \times 10^5 + 7 \times 10^5 = (2 + 7) \times 10^5$
$= 9 \times 10^5$ [✓]

(b) $5 \times 10^{-3} - 3 \times 10^{-4} = 5 \times 10^{-3} - 3 \times 10^{-1} \times 10^{-3}$
$= 5 \times 10^{-3} - 0.3 \times 10^{-3}$
$= (5 - 0.3) \times 10^{-3}$
$= 4.7 \times 10^{-3}$
$\neq 2 \times 10^{-3}$ [✗]

(c) $4 \times 10^3 \times 9 \times 10^5 = (4 \times 9) \times (10^3 \times 10^5)$
$= 36 \times 10^8$
$= 3.6 \times 10^9$ [✓]

(d) $(6 \times 10^6) \div (8 \times 10^{-2}) = \dfrac{6 \times 10^6}{8 \times 10^{-2}}$
$= \dfrac{6}{8} \times \dfrac{10^6}{10^{-2}}$
$= 0.75 \times 10^{6-(-2)}$
$= 7.5 \times 10^{-1} \times 10^8$
$= 7.5 \times 10^7$ [✓]

14 (a) $3.7 \times 10^6 - 5 \times 10^5 = 3.7 \times 10^6 - 0.5 \times 10^6$
$= (3.7 - 0.5) \times 10^6$
$= 3.2 \times 10^6$

(b) $8 \times 10^{-3} - 4 \times 10^{-5} = 8 \times 10^{-3} - 0.04 \times 10^{-3}$
$= (8 - 0.04) \times 10^{-3}$
$= 7.69 \times 10^{-3}$

(c) $6 \times 10^4 \times 7 \times 10^3 = (6 \times 7) \times (10^4 \times 10^3)$
$= 42 \times 10^{4+3}$
$= 4.2 \times 10^8$

(d) $\dfrac{3 \times 10^{-6}}{4 \times 10^{-2}} = \dfrac{3}{4} \times \dfrac{10^{-6}}{10^{-2}}$
$= 0.75 \times 10^{-6-(-2)}$
$= 7.5 \times 10^{-5}$

15 (a) Jisim bagi satu atom oksigen
Mass of one atom of oxygen
$= 16 \times 1.66 \times 10^{-24}$
$= 26.56 \times 10^{-24}$
$= 2.656 \times 10^{-23}$

(b) Jisim bagi satu molekul air
Mass of one molecule of water
$= 2 \times 1.66 \times 10^{-24} + 2.656 \times 10^{-23}$
$= 0.332 \times 10^{-23} + 2.656 \times 10^{-23}$
$= 2.988 \times 10^{-23}$

16 (a) Jarak yang dilalui/*Distance travelled*
$= 3 \times 10^5 \times 15$
$= (3 \times 15) \times 10^5$
$= 45 \times 10^5$
$= 4.5 \times 10^6$ km

(b) Masa yang diambil/*Time taken*
$= \dfrac{5.4 \times 10^{10} \times 10^{-3}}{3 \times 10^5}$
$= \dfrac{5.4 \times 10^7}{3 \times 10^5}$
$= \dfrac{5.4}{3} \times \dfrac{10^7}{10^5}$
$= 1.8 \times 10^2$ s

Praktis Sumatif

1 **A** Betul/*Correct*
B Betul/*Correct*
C Salah/*Wrong*
D Betul/*Correct*
Jawapan/*Answer*: **C**

2 $0.02698 \approx 0.0270$ (tiga angka bererti *three significant figures*)
Jawapan/*Answer*: **D**

3 $507\,000$
$= 5.07 \times 10^5$
$\approx 5.1 \times 10^5$ (dua angka bererti/*two significant figures*)
Jawapan/*Answer*: **B**

4 $\dfrac{215\,000}{0.0005} = \dfrac{2.15 \times 10^5}{5 \times 10^{-4}}$
$= \dfrac{2.15}{5} \times \dfrac{10^5}{10^{-4}}$
$= 0.43 \times 10^{5-(-4)}$
$= 0.43 \times 10^9$
$= 4.3 \times 10^{-1} \times 10^9$
$= 4.3 \times 10^8$
Jawapan/*Answer*: **D**

5 $8 \times 10^7 - 6 \times 10^5 = 8 \times 10^7 - 6 \times 10^{-2} \times 10^7$
$= 8 \times 10^7 - 0.06 \times 10^7$
$= (8 - 0.06) \times 10^7$
$= 7.94 \times 10^7$
Jawapan/*Answer*: **D**

6

Nombor *Number*	Bilangan angka bererti *Number of significant figures*	Satu angka bererti *One significant figure*
5 431	4	5 000
170 000	2	200 000
0.000926	3	0.0009
20.080	5	20

7 (a) Bilangan angka bererti bagi 342 000 (dalam ratus yang terhampir) ialah 4.
Number of significant figures of 342 000 (*in the nearest hundred*) *is* 4.

(b) $\frac{0.0516}{0.03} = 1.72$
≈ 1.7 (dua angka bererti/*two significant figures*)

8 (a) $\frac{3}{4} \times 10^6 = 0.75 \times 10^6$
$= 7.5 \times 10^{-1} \times 10^6$
$= 7.5 \times 10^5$
$\therefore A = 7.5, n = 5$

(b) $10.496 \times 10^{-13} = 1.0496 \times 10^1 \times 10^{-13}$
$= 1.0496 \times 10^{-12}$

(i) 1.0×10^{-12} (dua angka bererti *two significant figures*)

(ii) 1.050×10^{-12} (empat angka bererti *four significant figures*)

9 (a) $4\,800 \times 0.03 = 4.8 \times 10^3 \times 3 \times 10^{-2}$
$= (4.8 \times 3) \times (10^3 \times 10^{-2})$
$= 14.4 \times 10^{3-2}$
$= 1.44 \times 10^1 \times 10^1$
$= 1.44 \times 10^2$

(b) $5.2 \times 10^{-6} + 9.76 \times 10^{-5}$
$= 5.2 \times 10^{-1} \times 10^{-5} + 9.76 \times 10^{-5}$
$= 0.52 \times 10^{-5} + 9.76 \times 10^{-5}$
$= (0.52 + 9.76) \times 10^{-5}$
$= 10.28 \times 10^{-5}$
$= 1.028 \times 10^1 \times 10^{-5}$
$= 1.028 \times 10^{-4}$

10 (a) $(2 \times 10^5)^3 \times (7 \times 10^{-6}) = 2^3 \times (10^5)^3 \times 7 \times 10^{-6}$
$= 8 \times 10^{15} \times 7 \times 10^{-6}$
$= (8 \times 7) \times (10^{15} \times 10^{-6})$
$= 56 \times 10^9$
$= 5.6 \times 10^1 \times 10^9$
$= 5.6 \times 10^{10}$

(b) $\frac{(2 \times 10^5)^3 \times (7 \times 10^{-6})}{(0.08 \times 10^4)^2} = \frac{5.6 \times 10^{10}}{(0.08 \times 10^4)^2}$
$= \frac{5.6 \times 10^{10}}{0.08^2 \times (10^4)^2}$
$= \frac{5.6 \times 10^{10}}{(8 \times 10^{-2})^2 \times 10^8}$
$= \frac{5.6 \times 10^{10}}{64 \times 10^{-4} \times 10^8}$
$= \frac{5.6 \times 10^{10}}{64 \times 10^4}$
$= \frac{5.6}{64} \times \frac{10^{10}}{10^4}$
$= 0.0875 \times 10^6$
$= 8.75 \times 10^{-2} \times 10^6$
$= 8.75 \times 10^4$

11 (a) Jarak satelit dari pusat bumi
Distance of satellite from the centre of the earth
$= 4.23 \times 10^4 - 6.4 \times 10^3$
$= 4.23 \times 10^4 - 0.64 \times 10^4$
$= (4.23 - 0.64) \times 10^4$
$= 3.59 \times 10^4$ km

(b) Isi padu bumi/*Volume of the earth*
$= \frac{4}{3}\pi \times 6\,400^3$
$= \frac{4}{3}\pi \times (6.4 \times 10^3)^3$
$= \frac{4}{3}\pi \times 6.4^3 \times (10^3)^3$
$= 1\,098.5 \times 10^9$
$= 1.0985 \times 10^3 \times 10^9$
$= 1.0985 \times 10^{12}$
$\approx 1.10 \times 10^{12}$ km^3 (dua angka bererti *two significant figures*)

12 (a) $25 \times 1.4 \times p = 1.75 \times 10^4$
$35 \times p = 1.75 \times 10^4$
$p = 0.05 \times 10^4$
$= 5 \times 10^{-2} \times 10^4$
$= 5 \times 10^2$

Panjang bagi keping besi ialah 5×10^2 cm.
Length of the iron sheet is 5×10^2 cm.

(b) Jisim bagi keping besi/*Mass of iron sheet*
$= 1.75 \times 10^4 \times (10^{-2})^3 \times 7.87$
$= (1.75 \times 7.87) \times 10^4 \times (10^{-2})^3$
$= 13.8 \times (10^4 \times 10^{-6})$
$= 1.38 \times 10^1 \times 10^{-2}$
$= 1.38 \times 10^{-1}$ kg

13 (a) Luas kawasan perindustrian
Area of the industrial region
$= (27.2 \times 10^3) \times (20 \times 10^3)$
$= (27.2 \times 20) \times (10^3 \times 10^3)$
$= 544 \times 10^6$
$= 5.44 \times 10^2 \times 10^6$
$= 5.44 \times 10^8$ m^2

(b) Luas kawasan perindustrian
Area of the industrial region
$= 27 \times 20 \times 640 \div 2.59$ ekar/*acres*
$= 134\,000$ ekar/*acres*
$= 1.34 \times 10^5$ ekar/*acres*

Kaedah alternatif
Alternative method
Luas kawasan perindustrian
Area of the industrial region
$= 5.44 \times 10^8 \times (10^{-3})^2 \times 640 \div 2.59$
$= (5.44 \times 640 \div 2.59) \times 10^8 \times (10^{-3})^2$
$= 1\,340 \times 10^8 \times 10^{-6}$
$= 1.34 \times 10^3 \times 10^2$
$= 1.34 \times 10^5$ ekar/*acres*