



Bahagian A

1. $2, 9, 16, 23, 30, \dots$
 $\begin{array}{ccccccc} & \nearrow & \searrow & \nearrow & \searrow & \nearrow & \searrow \\ & +7 & & +7 & & +7 & & +7 \end{array}$

Jawapan / Answer: **D**

2. Nilai X / Value of $X = 3 + 3$
 $= 6$
 Nilai Y / Value of $Y = 6 + 4$
 $= 10$

$X + Y = 6 + 10$
 $= 16$

Jawapan / Answer: **B**

3. $-26, -19, \dots, -5, 2, \dots$
 $\begin{array}{ccccccc} & \nearrow & \searrow & \nearrow & \searrow & \nearrow & \searrow \\ & +7 & & +7 & & +7 & & +7 \end{array}$
 $-19 + 7 = -12$

Jawapan / Answer: **B**

4. $x + 4, x + 8, x + 12, x + 16, \dots$
 $\begin{array}{ccccccc} & \nearrow & \searrow & \nearrow & \searrow & \nearrow & \searrow \\ & +4 & & +4 & & +4 & & +4 \end{array}$

Sebutan pertama selepas $x + 16$

The first term after $x + 16$

$x + 16 + 4 = x + 20$

Sebutan kedua selepas $x + 16$

The second term after $x + 16$

$x + 20 + 4 = x + 24$

Jawapan / Answer: **D**

5. $-5x(3y - 4x)$
 $= -5x(3y) + (-5x)(-4x)$
 $= -15xy + 20x^2$

Jawapan / Answer: **D**

6. **A:** $(p + q)(p - q) = p(p) + p(-q) + q(p) + q(-q)$
 $= p^2 - pq + pq - q^2$
 $= p^2 - q^2$

B: $(p + q)(p - q) = p(p) + p(-q) + q(p) + q(-q)$
 $= p^2 - pq + pq - q^2$
 $= p^2 - q^2$

C: $(p + q)^2 = p^2 + 2pq + q^2$

D: $(p - q)^2 = p^2 - 2pq + q^2$

Jawapan / Answer: **B**

7. $3xy - 3yz - wx + wz$
 $= (3xy - 3yz) - (wx - wz)$
 $= 3y(x - z) - w(x - z)$
 $= (3y - w)(x - z)$

Jawapan / Answer: **D**

8. $\frac{q}{r^2(q - 3r)} \times (3r^2 - qr)$
 $= \frac{q}{r^2(q - 3r)} \times -r(-3r + q)$
 $= -\frac{q}{r}$

Jawapan / Answer: **A**

9. Jawapan / Answer: **D**

10. $h = \frac{m}{2 + m}$
 $h(2 + m) = m$
 $2h + hm = m$
 $2h = m - hm$
 $2h = m(1 - h)$
 $m = \frac{2h}{1 - h}$

Jawapan / Answer: **B**

11. Apabila $a = 8$ dan $b = 2$,
 When $a = 8$ and $b = 2$,
 $c = 8^2 - 2^2$
 $= 60$

Jawapan / Answer: **D**

12. Jawapan / Answer: **C**

13. Sudut peluaran / Exterior angle
 $= 180^\circ - 162^\circ$
 $= 18^\circ$

Bilangan sisi / Number of sides

$$= \frac{360^\circ}{18^\circ}$$

$$= 20$$

Jawapan / Answer: **D**

14. $w + x + 50^\circ + y + z = 360^\circ$
 $w + x + y + z = 360^\circ - 50^\circ$
 $w + x + y + z = 310^\circ$

Jawapan / Answer: **C**

15. Jawapan / Answer: **C**

16. Luas bulatan / Area of a circle

$$= \pi r^2$$

$$= \frac{22}{7} \times \left(\frac{14}{2}\right)^2$$

$$= 154 \text{ cm}^2$$

Jawapan / Answer: **C**

17. Panjang lengkok OQP

Length of arc OQP

$$= \frac{360^\circ - 70^\circ}{360^\circ} \times 2 \times \frac{22}{7} \times \frac{14}{2}$$

$$= 35.44 \text{ cm}$$

$$\text{Perimeter} = 35.44 + 7 + 7$$

$$= 49.44 \text{ cm}$$

Jawapan / Answer: **C**

18. Jawapan / Answer: **A**

19. Jawapan / Answer: **D**

20. Katakan ketinggian air dalam bekas tersebut ialah x

Let the height of water in the container is x

$$13 \times 13 \times x = 845$$

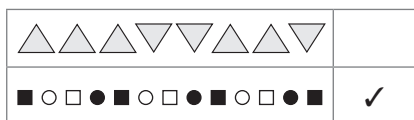
$$169x = 845$$

$$x = 5 \text{ cm}$$

Jawapan / Answer: **B**

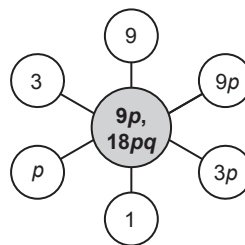
Bahagian B

1. (a)

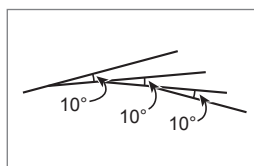


✓

(b)



(c)



20

24

36

Bilangan sisi / Number of sides

$$= \frac{360^\circ}{10^\circ}$$

$$= 36$$

2. (a) $14m + 21m^2 = 7m(2 + 3m)$

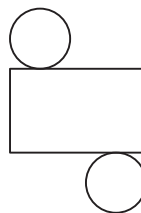
(b) Diameter bukan paksi simetri bagi sebuah bulatan.

A diameter is not the axis of symmetry of a circle. ()

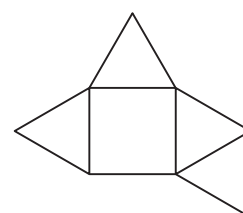
Bilangan paksi simetri bagi sebuah bulatan adalah tidak terhingga.

The number of axis of symmetry of a circle is infinite. (✓)

(c)



Silinder / Cylinder



Piramid / Pyramid

3. (a)

a	v	u	t
7	30	9	3
2	15	1	7

$$a = \frac{v - u}{t}$$

$$7 = \frac{30 - 9}{t}$$

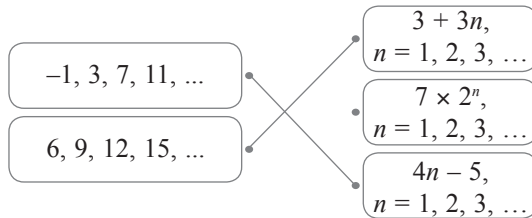
$$7t = 21$$

$$t = 3$$

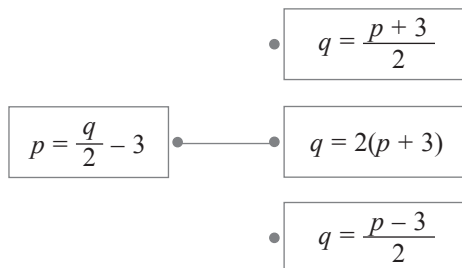
$$\begin{aligned} a &= \frac{v - u}{t} \\ &= \frac{15 - 1}{7} \\ &= \frac{14}{7} \\ &= 2 \end{aligned}$$

(b)	Hasil tambah sudut pedalaman nonagon ialah $1\ 260^\circ$. <i>The sum of interior angles of nonagon is $1\ 260^\circ$.</i>	BENAR TRUE
	Bilangan paksi simetri bagi poligon sekata adalah kurang satu daripada bilangan sisinya. <i>Number of axis of symmetry of a regular polygon is less one than the number of its sides.</i>	PALSU FALSE

4. (a)

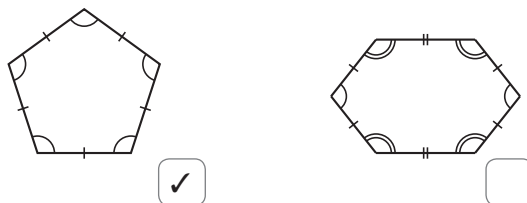


(b)



$$\begin{aligned} p &= \frac{q}{2} - 3 \\ \frac{q}{2} &= p + 3 \\ q &= 2(p + 3) \end{aligned}$$

(c)



5. (a)

$OB = OQ$	BENAR TRUE
Panjang lengkok $AC \neq$ panjang lengkok PR . <i>Length of arc $AC \neq$ length of arc PR.</i>	PALSU FALSE

- (b) (i) melengkung / curved
(ii) Kubus / cube

Bahagian C

1. (a) $a = 21 - 13$

$$= 8$$

$$b = 13 + 21$$

$$= 34$$

$$c = 55 + 89$$

$$= 144$$

$$\begin{aligned} a + b - c &= 8 + 34 - 144 \\ &= -102 \end{aligned}$$

$$(b) \ x = \frac{(5 - 2) \times 180^\circ}{5}$$

$$= 108^\circ$$

$$y = 180^\circ - 108^\circ$$

$$= 72^\circ$$

(c) Sudut yang tercangkum pada sektor major

The angel substended at the major sector

$$= \frac{7}{8} \times 360^\circ$$

$$= 315^\circ$$

Panjang lengkok major

The length of the major arc

$$= \frac{315^\circ}{360^\circ} \times 2 \times \frac{22}{7} \times 14$$

$$= 77 \text{ cm}$$

(d) Panjang DA / Length of DA

$$= \sqrt{4^2 + 3^2}$$

$$= 5 \text{ cm}$$

Luas permukaan / Total surface area

$$\begin{aligned} &= 2\left[\frac{1}{2} \times (8 + 5) \times 4\right] + (8 \times 6) + (6 \times 4) + (5 \times 6) \\ &\quad + (5 \times 6) \\ &= 52 + 48 + 24 + 30 + 30 \\ &= 184 \text{ cm}^2 \end{aligned}$$

2. (a) (i) (a) $4p(q - 3)$
 $= 4p(q) + 4p(-3)$
 $= 4pq - 12p$

(b) $-6(3 - 4p)$
 $= -6(3) + (-6)(-4p)$
 $= -18 + 24p$

(ii) $10y^2 - 7y - 12$
 $= (2y - 3)(5y + 4)$

$$\begin{array}{r|l} \begin{array}{r} 2y \quad \quad -3 \\ 5y \quad \quad 4 \\ \hline 10y^2 \quad -12 \end{array} & \begin{array}{l} -15y \\ 8y \\ -7y \end{array} \\ \text{(x)} & \text{(+) } \end{array}$$

(b) 700, 715, 730, 745, ...
 $+15 \quad +15 \quad +15$

$T_1 = 700$ $T_6 = 775$

$T_2 = 715$ $T_7 = 790$

$T_3 = 730$ $T_8 = 805$

$T_4 = 745$ $T_9 = 820$

$T_5 = 760$ $T_{10} = 835$

Maka, isi padu air akan menjadi 835 liter pada hari kesepuluh.

Thus, the volume of water will be 835 litres on the 10th day.

(c) Diameter bulatan / Diameter of the circle

$= \sqrt{8^2 + 6^2}$

$= \sqrt{100}$

$= 10 \text{ cm}$

Luas bulatan / Area of the circle

$= \pi r^2$

$= \frac{22}{7} \times \left(\frac{10}{2}\right)^2$

$= 78\frac{4}{7} \text{ cm}^2$

Luas Segi empat tepat ABCD

Area of triangle ABCD

$= 8 \times 6$

$= 48 \text{ cm}^2$

Luas kawasan berlerek / Area of the shaded region

$= 78\frac{4}{7} - 48$

$= 30\frac{4}{7} \text{ cm}^2$

3. (a) 43, 49, 55, a , 67, 73, 79, b ...
 $+6 \quad +6 \quad +6 \quad +6 \quad +6 \quad +6$

$a = 55 + 6 = 61$

$b = 79 + 6 = 85$

(b) Luas / Area

$\left(\frac{1}{2} \times 2y \times x\right) + (2y \times 30) = 1680$
 $xy + 60y = 1680$

(c) Sudut pedalaman heksagon sekata

Interior angle of regular hexagon

$= \frac{(6 - 2) \times 180^\circ}{6}$

$= 120^\circ$

Sudut pedalaman pentagon sekata

Interior angle of regular pentagon

$= \frac{(5 - 2) \times 180^\circ}{5}$

$= 108^\circ$

$120^\circ + 108^\circ + y = 360^\circ$

$228^\circ + y = 360^\circ$

$y = 132^\circ$

(d) Katakan tinggi kubus = t cm

Let the height of the cuboid = t cm

Isi padu piramid + Isi padu kubus = 300

Volume of pyramid + Volume of cuboid = 300

$\frac{1}{3} \times (5 \times 5) \times 6 + (5 \times 5 \times t) = 300$

$50 + 25t = 300$

$25t = 250$

$t = 10 \text{ cm}$

4. (a) $\frac{p}{q} + \frac{4}{6q}(36q^2 + 24p)$

$= \frac{p}{q} + 24q + \frac{16p}{q}$

$= \frac{p}{q} + \frac{24q \times q}{1 \times q} + \frac{16p}{q}$

$= \frac{p + 24q^2 + 16p}{q}$

$= \frac{24q^2 + 17p}{q}$

(b) (i) $f = 2st + 1$

$2st = f - 1$

$s = \frac{f - 1}{2t}$

(ii) $s = \frac{49 - 1}{2(3)}$

$= \frac{48}{6}$

$= 8$

- (c) Sudut pedalaman oktagon $PQRSTUVW$
Interior angle of octagon $PQRSTUVW$

$$= \frac{(8 - 2) \times 180^\circ}{8}$$

$$= 135^\circ$$

$$\angle VWU = \frac{180^\circ - 135^\circ}{2}$$

$$= 22.5^\circ$$

$$\angle UWK = \frac{180^\circ}{3}$$

$$= 60^\circ$$

$$22.5^\circ + 60^\circ + x = 135^\circ$$

$$82.5^\circ + x = 135^\circ$$

$$x = 52.5^\circ$$

5. (a) Panjang CE / Length of CE

$$(x + 6) + 4(x - 1) + CE = 8x - 2$$

$$x + 6 + 4x - 4 + CE = 8x - 2$$

$$5x + 2 + CE = 8x - 2$$

$$CE = 8x - 2 - 5x - 2$$

$$CE = (3x - 4) \text{ cm}$$

Luas ACE / Area of ACE

$$= \frac{1}{2} \times (x + 6) \times (3x - 4)$$

$$= \frac{1}{2} (3x^2 - 4x + 18x - 24)$$

$$= \left(\frac{3x^2 + 14x - 24}{2} \right) \text{ cm}^2$$

Luas BCD / Area of BCD

$$= \frac{1}{2} \times \left(\frac{x + 6}{2} \right) \times \left(\frac{3x - 4}{2} \right)$$

$$= \frac{1}{2} \left(\frac{3x^2 + 14x - 24}{4} \right)$$

$$= \left(\frac{3x^2 + 14x - 24}{8} \right) \text{ cm}^2$$

Luas kawasan berlorek / Area of the shaded region

$$= \frac{3x^2 + 14x - 24}{2} - \frac{3x^2 + 14x - 24}{8}$$

$$= \frac{12x^2 + 56x - 96 - 3x^2 - 14x + 24}{8}$$

$$= \frac{9x^2 + 42x - 72}{8}$$

$$= \left(\frac{9x^2}{8} + \frac{21x}{4} - 9 \right) \text{ cm}^2$$

- (b) Luas sektor BOA / Area of sector BOA

$$= \frac{\theta}{360^\circ} \times \pi r^2$$

$$= \frac{60^\circ}{360^\circ} \times \frac{22}{7} \times 28^2$$

$$= 410.67 \text{ cm}^2$$

Luas segi tiga / Area of the triangle

$$= \frac{1}{2} \times 28 \times \sqrt{28^2 - 14^2}$$

$$= \frac{1}{2} \times 28 \times 24.25$$

$$= 339.5 \text{ cm}^2$$

Luas tembereng berlorek

Area of the shaded segment

$$= 410.67 - 339.5$$

$$= 71.17 \text{ cm}^2$$

- (c) Isi padu air / Volume of the water

$$= \frac{1}{2} \pi r^2 t$$

$$= \frac{1}{2} \times \frac{22}{7} \times \left(\frac{60}{2} \right)^2 \times 56$$

$$= 79\,200 \text{ cm}^3$$

6. (a) (i) $-31, -25, -19, -13$

+6 +6 +6

Pola / Pattern: +6

(ii) $-31, -25, -19, -13, -7, -1$

Jumlah 6 sebutan yang pertama

Total of the first 6 terms

$$= -31 + (-25) + (-19) + (-13) + (-7) + (-1)$$

$$= -96$$

(b) (i) $W = h + h - 10$

$$= 2h - 10$$

(ii) Apabila $W = 326$

When $W = 326$

$$2h - 10 = 326$$

$$2h = 336$$

$$h = 168$$

Tinggi adik Daniel

The height of Daniel brother

$$= 168 - 10$$

$$= 158 \text{ cm}$$

- (c) (i) Pentagon

(ii) $166^\circ + 45^\circ + 120^\circ + 95^\circ + a = 540^\circ$

$$426^\circ + a = 540^\circ$$

$$a = 114^\circ$$

$$x = 180^\circ - 114^\circ$$

$$= 66^\circ$$