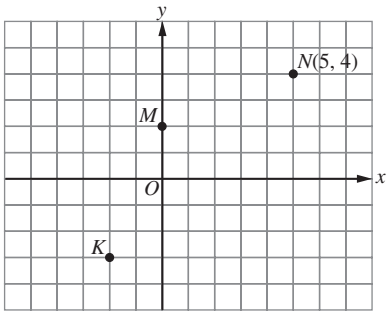
Jawapan

Praktis 7

Praktis Formatif

1

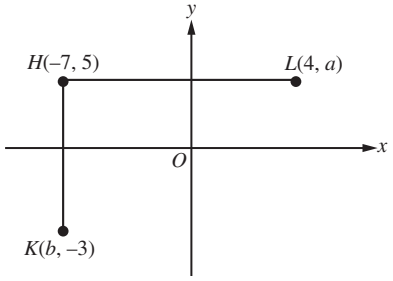


Koordinat yang mungkin bagi K ialah $(-2, -3)$.
The possible coordinates of K are $(-2, -3)$.
Jawapan/*Answer*: **B**

2 (a) 5 (b) 3 (c) 5 (c) 10

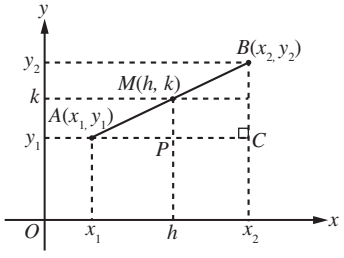
3 (a) $PQ = 10 - 6$
$= 4$ unit/*units*
(b) $PQ = 5 - (-2)$
$= 7$ unit/*units*
(c) $PQ = 7 - (-11)$
$= 18$ unit/*units*
(d) $PQ = -3 - (-14)$
$= 11$ unit/*units*

4



A $a = 5$
B $b = -7$
C $HL = 4 - (-7) = 4 + 7 = 11$ unit/*units*
D $HK = 5 - (-3) = 5 + 3 = 8$ unit/*units*
Jawapan/*Answer*: **C**

5 (a)

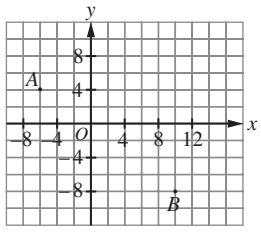


(b) Jarak di antara A dan B/*Distance between A and B*
$= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

6 (a) Jarak di antara dua titik
Distance between two points
$= \sqrt{(-7 + 2)^2 + (2 - 6)^2}$
$= \sqrt{(-5)^2 + (-4)^2}$
$= \sqrt{25 + 16}$
$= \sqrt{41}$
$= 6.40$ unit/*units*

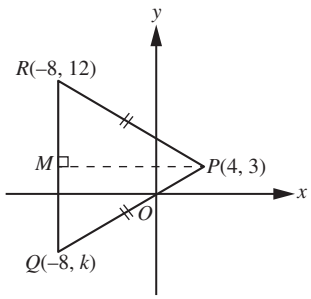
(b) Jarak di antara dua titik
Distance between two points
$= \sqrt{(10 + 4)^2 + (-8 - 2)^2}$
$= \sqrt{14^2 + (-10)^2}$
$= \sqrt{196 + 100}$
$= \sqrt{296}$
$= 17.20$ unit/*units*

7 (a)



(b) Jarak di antara A dan B/*Distance between A and B*
$= \sqrt{(-6 - 10)^2 + (4 + 8)^2}$
$= \sqrt{(-16)^2 + 12^2}$
$= \sqrt{256 + 144}$
$= \sqrt{400}$
$= 20$ unit/*units*

8



(a) $PR = \sqrt{(4 + 8)^2 + (3 - 12)^2}$
$= \sqrt{12^2 + (-9)^2}$
$= \sqrt{144 + 81}$
$= \sqrt{225}$
$= 15$ unit/*units*
$PQ = 15$ unit/*units*

(b) $M(-8, 3)$ ialah titik tengah QR.
$M(-8, 3)$ *is the midpoint of* QR.

$$\frac{12 + k}{2} = 3$$
$$12 + k = 6$$
$$k = -6$$

(c) $QR = 12 - (-6)$
$= 12 + 6$
$= 18$ unit/*units*

9 (a) $AB = 4$ unit/*units*
$5 - h = 4$
$h = 1$
CD adalah selari dengan paksi-x.
CD *is parallel to the* x*-axis.*
$\therefore k = -3$

(b) (i) Jarak/*Distance* AD
$= \sqrt{(1 - 6)^2 + (9 + 3)^2}$
$= \sqrt{(-5)^2 + 12^2}$
$= \sqrt{25 + 144}$
$= \sqrt{169}$
$= 13$ unit/*units*

(ii) Jarak/*Distance* BC
$= \sqrt{(5 - 14)^2 + (9 + 3)^2}$
$= \sqrt{(-9)^2 + 12^2}$
$= \sqrt{81 + 144}$
$= \sqrt{225}$
$= 15$ unit/*units*

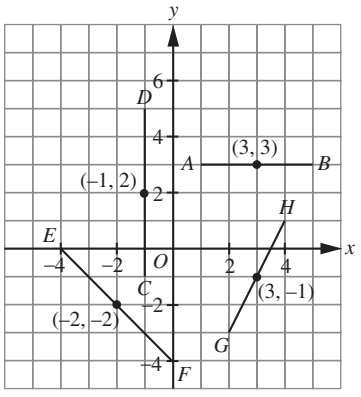
(c) Perimeter bagi trapezium $ABCD$
Perimeter of trapezium $ABCD$
$= 4 + 15 + 8 + 13$
$= 40$ unit/*units*

10 $\left(\frac{x + 8}{2}, \frac{7 + 1}{2}\right) = (5, y)$

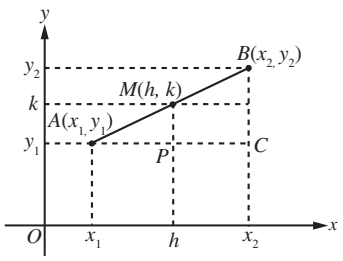
$$\left(\frac{x + 8}{2}, 4\right) = (5, y)$$
$$\frac{x + 8}{2} = 5$$
$$x + 8 = 10$$
$$x = 2$$
$$y = 4$$

Jawapan/*Answer*: **B**

11



12 (a)



(b) $AP = PC$
$h - x_1 = x_2 - h$
$2h = x_1 + x_2$
$$h = \frac{x_1 + x_2}{2}$$
$CQ = QB$
$k - y_1 = y_2 - k$
$2k = y_1 + y_2$
$$k = \frac{y_1 + y_2}{2}$$

(c) Koordinat bagi titik tengah AB
Coordinates of the midpoint of AB
$$= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

13 (a) Koordinat titik tengah
Coordinates of the midpoint
$$= \left(\frac{3 + 7}{2}, \frac{0 + 6}{2}\right)$$
$= (5, 3)$

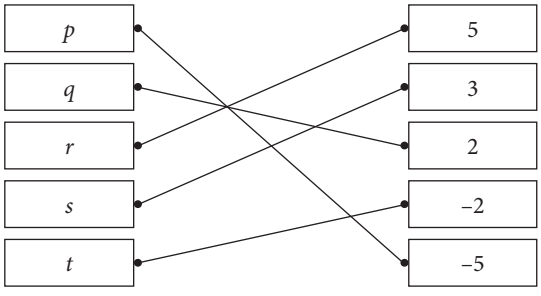
(b) Koordinat titik tengah
Coordinates of the midpoint
$$= \left(\frac{2 - 8}{2}, \frac{4 - 4}{2}\right)$$
$= (-3, 0)$

(c) Koordinat titik tengah
Coordinates of the midpoint
$$= \left(\frac{-1 - 5}{2}, \frac{9 + 3}{2}\right)$$
$= (-3, 6)$

14 (a) $\frac{x - 5}{2} = 6$
$x - 5 = 12$
$x = 17$

(b) $\frac{y + 3}{2} = -1$
$y + 3 = -2$
$y = -5$

15



16 Titik tengah QS = Titik tengah PR
Midpoint of QS = Midpoint of PR

$$\left(\frac{m+0}{2}, \frac{n+4}{2}\right) = \left(\frac{8+4}{2}, \frac{0+12}{2}\right)$$

$$\left(\frac{m}{2}, \frac{n+4}{2}\right) = (6, 6)$$

$$\frac{m}{2} = 6$$

$$m = 12$$

$$\frac{n+4}{2} = 6$$

$$n + 4 = 12$$

$$n = 8$$

17 $M(-2, 9)$ ialah titik tengah HK.
$M(-2, 9)$ *is the midpoint of* HK.

$$\frac{-7+r}{2} = -2$$

$$-7 + r = -4$$

$$r = 3$$

Jawapan/*Answer*: **A**

18 (a) $AD = BC$

$AD = 6 - 3 = 3$ unit/*units*

Koordinat bagi titik D ialah $(-6, -3)$.
Coordinates of point D are $(-6, -3)$. [✓]

(b) Koordinat bagi titik tengah AC
Coordinates of the midpoint of AC

$$= \left(\frac{-6+2}{2}, \frac{0+3}{2}\right)$$

$$= \left(-2, \frac{3}{2}\right)$$ [✗]

(c) $AB = \sqrt{(2+6)^2 + (6-0)^2}$

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

$= \sqrt{64 + 36}$

$= \sqrt{100}$

$= 10$ unit/*units*

Perimeter $ABCD = 2(10 + 3)$

$= 2(13)$

$= 26$ unit/*units* [✓]

19 (a) $PS = 7 - (-5)$

$= 7 + 5$

$= 12$ unit/*units*

$RS^2 = 13^2 - 12^2$

$= 169 - 144$

$= 25$

$RS = 5$ unit/*units*

Koordinat bagi titik R ialah $(7, 3)$.
The coordinates of point R are $(7, 3)$.

(b) (i) Koordinat bagi pusat bulatan
= Koordinat bagi titik tengah PR
Coordinates of the centre of circle
= Coordinates of the midpoint of PR

$$= \left(\frac{-5+7}{2}, \frac{-2+3}{2}\right)$$

$$= \left(1, \frac{1}{2}\right)$$

(ii) $PR = \sqrt{(-5-7)^2 + (-2-3)^2}$

$= \sqrt{(-12)^2 + (-5)^2}$

$= \sqrt{144 + 25}$

$= \sqrt{169}$

$= 13$ unit/*units*

Jejari bagi bulatan/*Radius of circle*

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

$$= \frac{13}{2}$$

$$= 6\frac{1}{2} \text{ unit/}units$$

(c) Jarak K dari pusat bulatan
Distance of K from the centre of circle

$$= \sqrt{(3-1)^2 + \left(6 - \frac{1}{2}\right)^2}$$

$$= \sqrt{2^2 + \left(\frac{11}{2}\right)^2}$$

$$= \sqrt{4 + \frac{121}{4}}$$

$$= \sqrt{\frac{137}{4}}$$

$= 5.85$ unit/*units*

Jarak K dari pusat bulatan adalah kurang daripada jejari bulatan.
$\therefore$ K terletak di dalam bulatan itu.
The distance of K from the centre of the circle is less than the radius of circle.
$\therefore$ *K lies inside the circle.*

Praktis Sumatif

1 $PQ = 2 - (-6)$

$= 2 + 6$

$= 8$ unit/*units*

$QR = 4 - (-2)$

$= 4 + 2$

$= 6$ unit/*units*

$PR^2 = (2 + 6)^2 + (4 + 2)^2$

$= 8^2 + 6^2$

$= 100$

$PR = 10$ unit/*units*

$PQ : QR = 8 : 6$

$= 4 : 3$

Jawapan/*Answer*: **D**

2 $OP^2 = (4 - 0)^2 + (3 - 0)^2$

$= 16 + 9$

$= 25$

$OP = 5$ unit/*units*

A $OT^2 = (2 - 0)^2 + (5 - 0)^2$

$= 4 + 25$

$= 29$

$OT = \sqrt{29}$ unit/*units*

B $OU^2 = (-3 - 0)^2 + (5 - 0)^2$

$= 9 + 25$

$= 34$

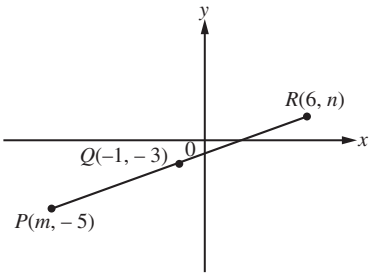
$OU = \sqrt{34}$ unit/*units*

C $OV = 0 - (-5)$
$= 5$ unit/*units*

D $OW^2 = (1 - 0)^2 + (-5 - 0)^2$
$= 1 + 25$
$= 26$
$OW = \sqrt{26}$ unit/*units*

Jawapan/*Answer*: **C**

3



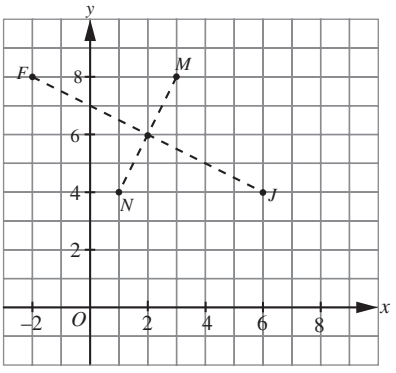
$$\left(\frac{m+6}{2}, \frac{-5+n}{2}\right) = (-1, -3)$$
$$\frac{m+6}{2} = -1$$
$$m + 6 = -2$$
$$m = -8$$
$$\frac{-5+n}{2} = -3$$
$$-5 + n = -6$$
$$n = -1$$

Jawapan/*Answer*: **A**

4 *VW* adalah selari dengan paksi-*x*.
VW is parallel to the x-axis.
$VW = 7$
$k - 2 = 7$ atau/*or* $2 - k = 7$
$k = 9$ atau/*or* $k = -5$

Jawapan/*Answer*: **B**

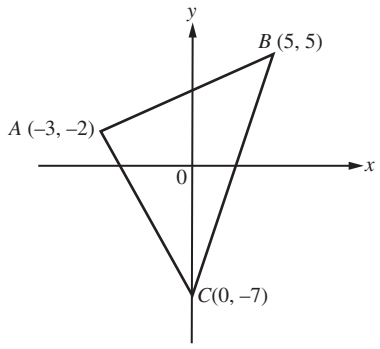
5



Titik tengah *FJ* ialah (2, 6).
Midpoint of FJ is (2, 6).
Koordinat bagi titik *N* ialah (1, 4).
The coordinates of point N are (1, 4).

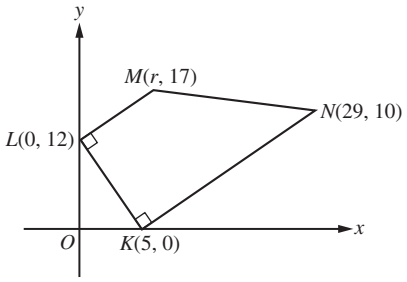
Jawapan/*Answer*: **B**

6



$AB^2 = (5 + 3)^2 + (5 + 2)^2$
$= 8^2 + 7^2$
$= 113$
$BC^2 = (5 - 0)^2 + (5 + 7)^2$
$= 5^2 + 12^2$
$= 169$
$AC^2 = (-3 - 0)^2 + (-2 + 7)^2$
$= (-3)^2 + 5^2$
$= 34$
$AB^2 + AC^2 = 113 + 34$
$= 147$
$AB^2 + AC^2 \neq BC^2$
$\therefore$ *ABC* bukan sebuah segi tiga bersudut tegak.
$\therefore$ *ABC is not a right-angled triangle.*

7

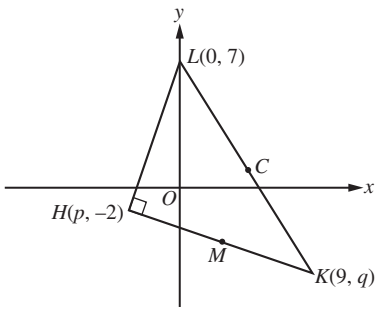


(a) $KN^2 = (29 - 5)^2 + (10 - 0)^2$
$= 24^2 + 10^2$
$= 676$
$KN = \sqrt{676}$
$= 26$ unit/*units*

(b) $KN = 2LM$
$LM = 13$ unit/*units*
$LM^2 = 169$
$(r - 0)^2 + (17 - 12)^2 = 169$
$r^2 + 25 = 169$
$r^2 = 144$
$r = 12$

(c) Luas trapezium
Area of trapezium
$= \frac{1}{2} \times (13 + 26) \times 13$
$= \frac{1}{2} \times 39 \times 13$
$= 253.5$ unit^2/*units*^{2}

8



(a) $\left(\frac{p+9}{2}, \frac{-2+q}{2}\right) = (3, -4)$

$\frac{p+9}{2} = 3$

$p + 9 = 6$

$p = -3$

$\frac{-2+q}{2} = -4$

$-2 + q = -8$

$q = -6$

(b) KL ialah diameter bulatan.
KL is the diameter of the circle.
Pusat bulatan, C ialah titik tengah KL.
Centre of circle, C is the midpoint of KL.

$C\left(\frac{9+0}{2}, \frac{-6+7}{2}\right) = C\left(\frac{9}{2}, \frac{1}{2}\right)$

$CH^2 = \left(\frac{9}{2} + 3\right)^2 + \left(\frac{1}{2} + 2\right)^2$

$= \left(\frac{15}{2}\right)^2 + \left(\frac{5}{2}\right)^2$

$= \frac{225}{4} + \frac{25}{4}$

$= \frac{250}{4}$

$CH = \sqrt{\frac{250}{4}}$

$= 7.91$ unit/*units*

Kaedah alternatif
Alternative method

$KL^2 = (9 - 0)^2 + (-6 - 7)^2$

$= 9^2 + (-13)^2$

$= 81 + 169$

$= 250$

$KL = \sqrt{250}$

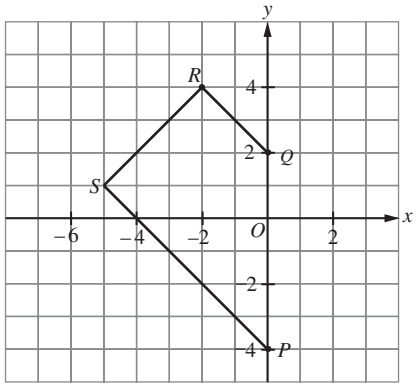
$= 15.81$ unit/*units*

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

$= \frac{1}{2}(15.81)$

$= 7.91$ unit/*units*

9 (a)



$S(-5, k) = S(-5, 1)$

$k = 1$

(b) Titik tengah bagi PS
Midpoint of PS

$= \left(\frac{0-5}{2}, \frac{-4+1}{2}\right)$

$= \left(-\frac{5}{2}, -\frac{3}{2}\right)$

(c) $RS^2 = (-2 + 5)^2 + (4 - 1)^2$

$= 3^2 + 3^2$

$= 9 + 9$

$= 18$

$RS = \sqrt{18} = 4.24$ unit/*units*