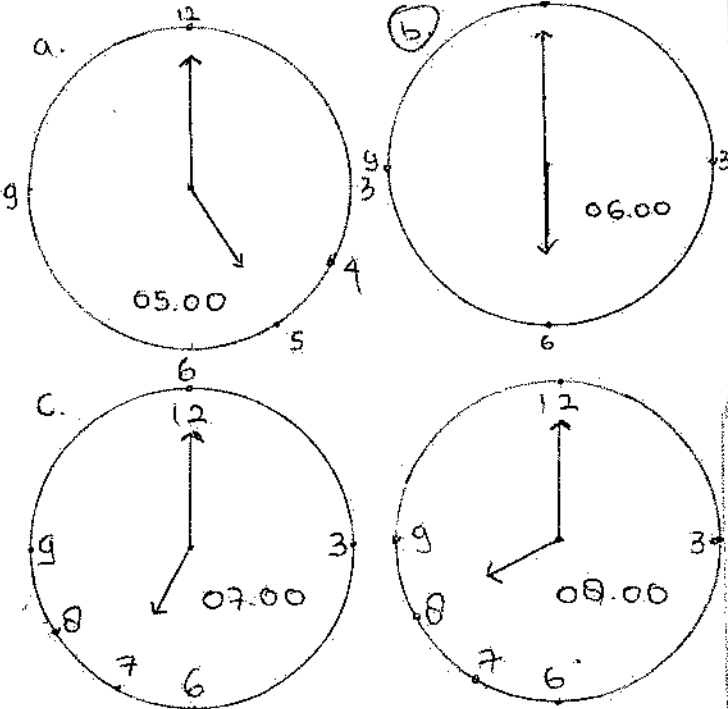


BAB 6

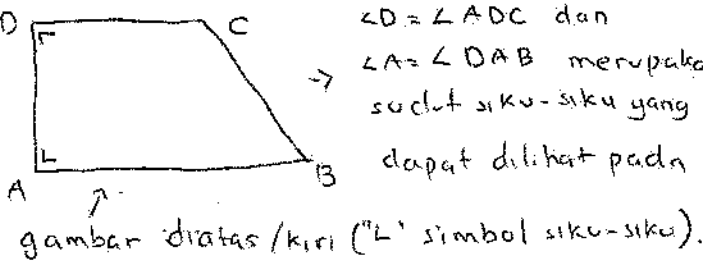
~ UJI PEMAHAMAN HAL 209,
211, 212, 213, 219, 224, 227,
229, 230, 233, 235, 237,
LATIHAN SOAL AKHIR BAB,
URAIAN BAB, DAN SOAL
AKM

UJI PEMAHAMAN HAL 190

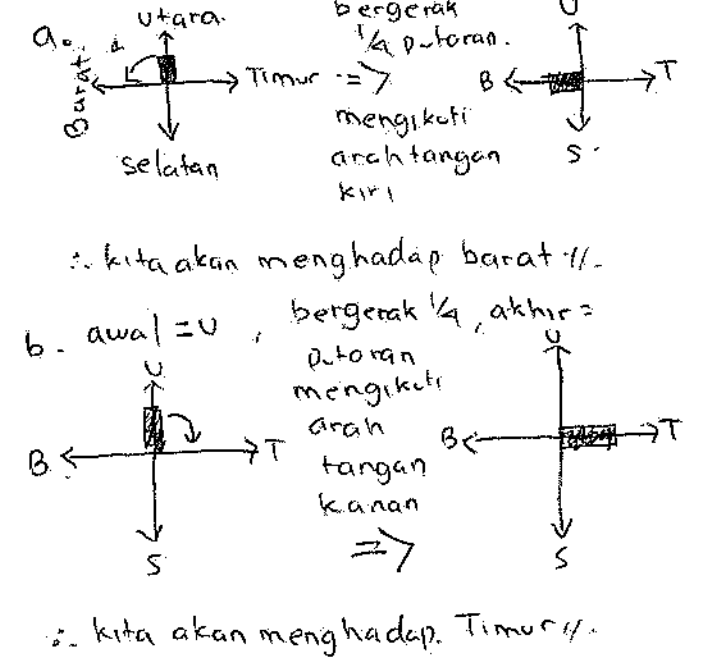
Nomor 1



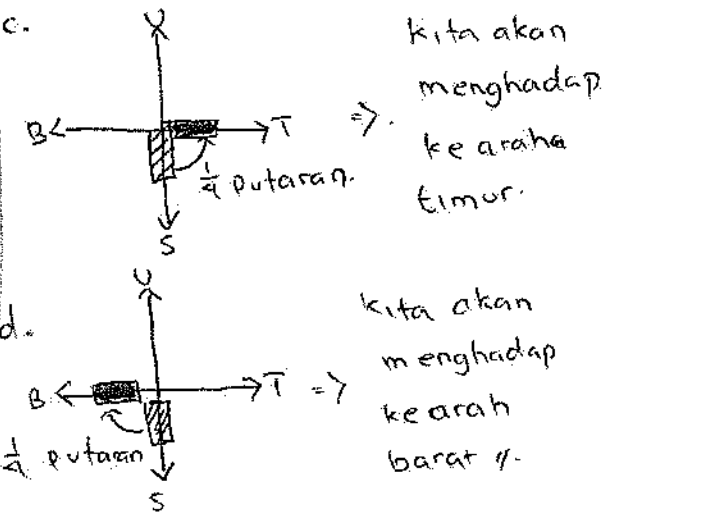
Nomor 2



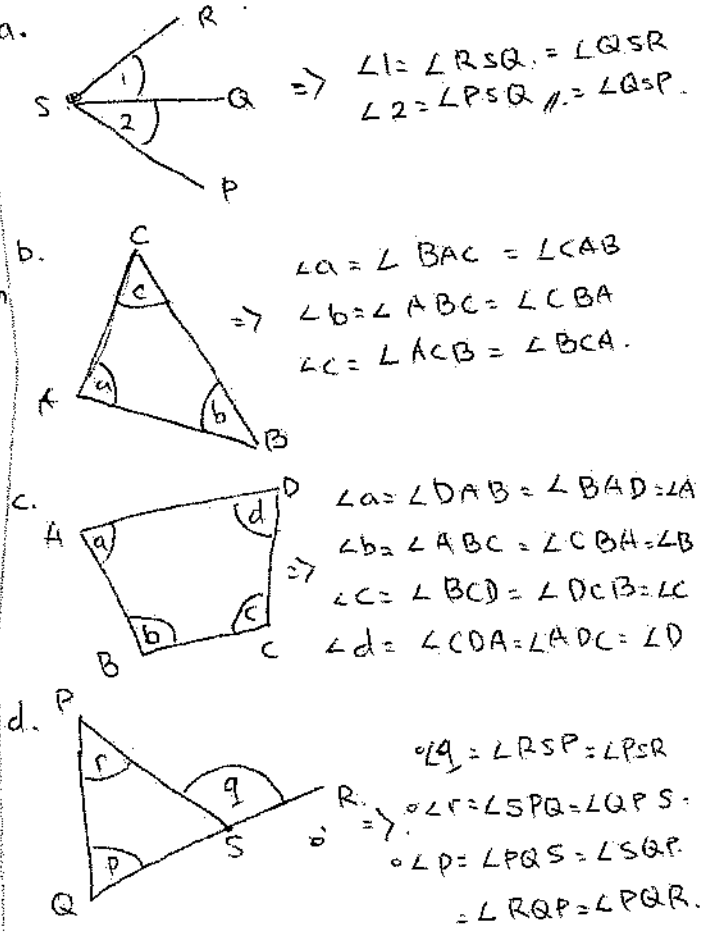
Nomor 3



Nomor 3 (Lanjutan)

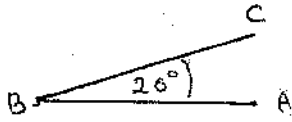


Nomor 4

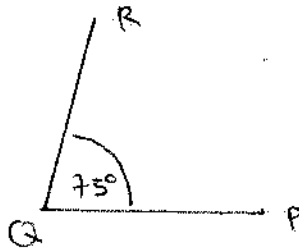


— Nomor 5 —

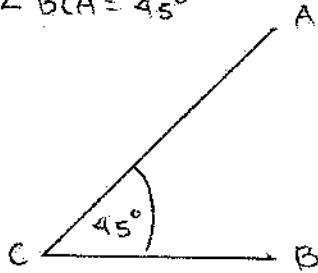
a. $\angle ABC = 20^\circ$



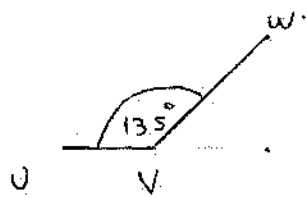
c. $\angle PQR = 75^\circ$



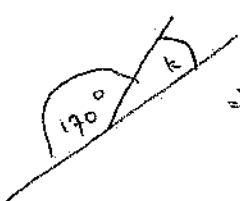
b. $\angle BCA = 45^\circ$

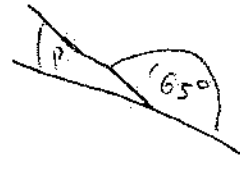


d. $\angle UVW = 135^\circ$

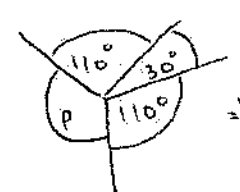


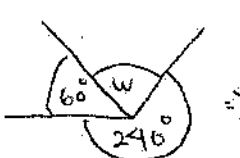
Nomor 1

a.  $k = 180^\circ - 170^\circ$
 $= (180 - 170)^\circ$
 $k = 10^\circ //$

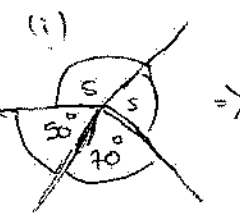
b.  $p = 180^\circ - 165^\circ$
 $= (180 - 165)^\circ$
 $p = 15^\circ //$

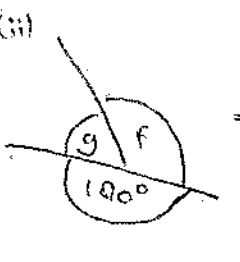
Nomor 2

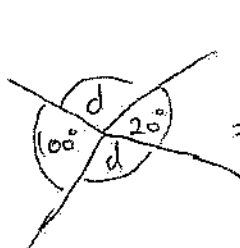
a.  $p = 360^\circ - (110^\circ + 110^\circ + 30^\circ)$
 $\Rightarrow p = 360^\circ - (250^\circ)$
 $p = 110^\circ //$

b.  $w = 360^\circ - (240^\circ + 60^\circ)$
 $\Rightarrow w = 360^\circ - 300^\circ$
 $w = 60^\circ //$

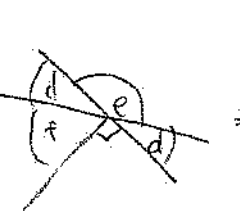
Nomor 3

a. (i)  $360^\circ = s + s + 50^\circ + 70^\circ$
 $\Rightarrow 2s = 360^\circ - 120^\circ$
 $2s = 240^\circ$
 $s = 120^\circ //$

b. (ii)  $f = 2g$
 $360^\circ = f + g + 180^\circ$
 $\Rightarrow 2g + g = 360^\circ - 180^\circ$
 $3g = 180^\circ$
 $g = 60^\circ //$

c.  $360^\circ = 100^\circ + d + 20^\circ + d$
 $\Rightarrow 360^\circ = 120^\circ + 2d$
 $2d = 240$
 $d = 120 //$

Nomor 3 (Lanjutan)

d.  $d = 30^\circ$
 $360^\circ = d + e + d + 90^\circ + f$
 $\Rightarrow 360^\circ = 30^\circ + 30^\circ + 90^\circ + e + f$
 $e + f = 360^\circ - 150^\circ = 210^\circ$
 e bertolak belakang dengan $(f + 90^\circ)$.
 $\Rightarrow e = f + 90^\circ \Rightarrow e + f = 210^\circ$
 $e = 60^\circ + 90^\circ \Rightarrow f + 90^\circ + f = 210^\circ$
 $e = 150^\circ //$
 $\Rightarrow 2f = 210^\circ - 90^\circ$
 $\Rightarrow 2f = 120^\circ$
 $\Rightarrow f = 60^\circ //$

Nomor 4
 Penyiku sudut ^{dari} a adalah dua kali besar sudut a .
 $(90^\circ - a) = 2 \times a$

$\Rightarrow 90^\circ - a = 2a$ $3a = 90^\circ$
 $\Rightarrow 3a = 90^\circ$ $\Rightarrow a = 30^\circ //$

Nomor 5

Besar pelurus dari sudut a adalah tiga kali penyiku sudut a

$(180^\circ - a) = 3 \times (90^\circ - a)$ $\Rightarrow 2a = 90^\circ$
 $\Rightarrow 180^\circ - a = 270^\circ - 3a$ $\Rightarrow a = 45^\circ //$
 $\Rightarrow 3a - a = 270^\circ - 180^\circ$

UJI PEMAHAMAN HAL 195

Nomor 1

Sudut yang dibentuk oleh garis vertikal (titik pusat ke angka (2). dengan

$$\bullet \text{ Jarum pendek} = a \times 30^\circ + \frac{b}{2} \cdot 1^\circ$$

$$\bullet \text{ Jarum panjang} = b \cdot 6^\circ$$

dimana a, b adalah jam bentuk digital.

a. $7.20 \Rightarrow a=7, b=20$

$$\bullet \text{ Jarum pendek} = 7 \times 30^\circ + \frac{20}{2} \cdot 1^\circ = 220^\circ$$

$$\bullet \text{ Jarum panjang} = 20 \times 6^\circ = 120^\circ$$

$$\Rightarrow \text{sudut } (7.20) = 220^\circ - 120^\circ = 100^\circ$$

b. $4.15 \Rightarrow a=4, b=15$

$$\bullet \text{ Jarum pendek} = 4 \times 30^\circ + \frac{15}{2} \cdot 1^\circ = 127,5^\circ$$

$$\bullet \text{ Jarum panjang} = 15 \cdot 6^\circ = 90^\circ$$

$$\Rightarrow \text{sudut } (4.15) = 127,5^\circ - 90^\circ = 37,5^\circ$$

c. $2.30 \Rightarrow a=2, b=30$

$$\bullet \text{ Jarum pendek} = 2 \times 30^\circ + \frac{30}{2} \cdot 1^\circ = 75^\circ$$

$$\bullet \text{ Jarum panjang} = 30 \times 6^\circ = 180^\circ$$

$$\Rightarrow \text{sudut } (2.30) = 180^\circ - 75^\circ = 105^\circ$$

d. $11.20 \Rightarrow a=11, b=20$

$$\bullet \text{ Jarum pendek} = 11 \times 30^\circ + \frac{20}{2} \cdot 1^\circ = 340^\circ$$

$$\bullet \text{ Jarum panjang} = 20 \times 6^\circ = 120^\circ$$

$$\Rightarrow \text{sudut } (11.20) = 340^\circ - 120^\circ = 220^\circ > 180^\circ$$

$$\Rightarrow \text{sudut } (11.20) = (360^\circ - 220^\circ) = 140^\circ$$

Nomor 2

a. $1.00 \Rightarrow \text{Jarum pendek} = 1 \times 30^\circ = 30^\circ$

$$3.15 \Rightarrow \text{Jarum pendek} = 3 \times 30^\circ + \frac{15}{2} \cdot 1^\circ = 97,5^\circ$$

$$\therefore \text{ sudut antara jarum pendek } 1.00 \text{ dan } 3.15 = 97,5^\circ - 30^\circ = 67,5^\circ //$$

Halaman: 4/19

Nomor 2 (Lanjutan)

$$09.30 \Rightarrow \text{Jarum pendek} = 9 \times 30^\circ + \frac{30}{2} \cdot 1^\circ = 285^\circ$$

$$11.20 \Rightarrow \text{Jarum pendek} = 11 \times 30^\circ + \frac{20}{2} \cdot 1^\circ = 340^\circ$$

$$\text{Sudut } (09.30, 11.20) = 340^\circ - 285^\circ = 55^\circ$$

Nomor 3

a. Pukul 7 pagi =

$$\Rightarrow \text{Jarum pendek} = 7 \times 30^\circ = 210^\circ$$

$$J.P_{\text{baru}} = 210^\circ + \frac{1}{3} \cdot 360^\circ = 230^\circ \quad \left(+ \frac{1}{3} \text{ putaran} \right)$$

$$J.P_{\text{baru}} = 330^\circ = 11 \times 30^\circ + \frac{0}{2} \cdot 1^\circ \leftarrow \frac{30}{330} \cdot \frac{360}{0}$$

$$\Rightarrow \text{Sekarang pukul } 11.00 //$$

b. Pukul 9 pagi

$$\Rightarrow \text{Jarum pendek} = 9 \times 30^\circ = 270^\circ$$

$$\downarrow + \frac{3}{4} \text{ putaran} = \frac{3}{4} \cdot 360^\circ$$

$$\text{Jarum pendek sekarang} = 270^\circ + \frac{3}{4} \cdot 360^\circ$$

$$= 270^\circ + 270^\circ$$

$$= 540^\circ = 360^\circ + 180^\circ$$

$$= 180^\circ = 6 \cdot 30^\circ + \frac{0}{2} \cdot 1^\circ$$

$$\Rightarrow \text{Sekarang pukul } 6 \text{ malam.}$$

Nomor 4

$$G1 = 0^\circ, G2 = \frac{1}{4} \text{ putaran}, G3 = \frac{1}{2} \text{ putaran}$$

$$G4 = G3 \text{ (kalkingannya diluruskan tidak berputar)} \Rightarrow \text{putaran sebanyak } \frac{1}{2} \text{ putaran}$$

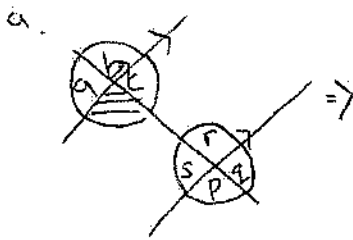
$$\text{Nomor 5}$$

$$G1 = 0 \text{ putaran}, G2 = \frac{1}{4} \text{ putaran}, G3 = \frac{3}{4} \text{ putaran}$$

$$G4 = \frac{1}{4} \text{ putaran}, G5 = \frac{6}{4} \text{ putaran}$$

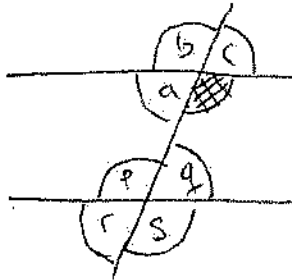
UJI PEMAHAMAN HAL 201

Nomor 1



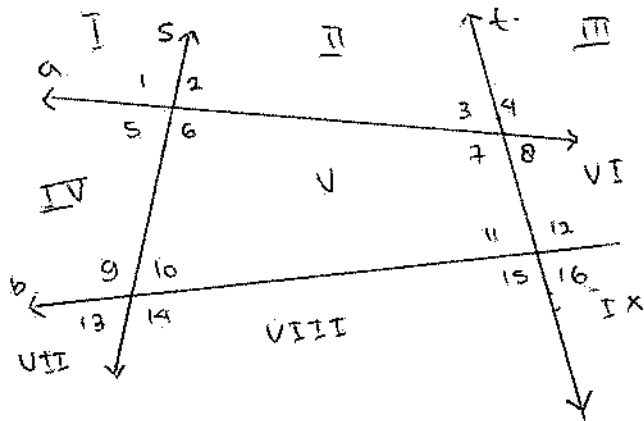
• Sudut dalam sepihak area yang diarsir adalah $\angle S$ //.

b.



• Sudut dalam sepihak dari sudut yang diarsir adalah $\angle q$ //.

Nomor 2



$\angle 13$ dan $\angle 15$. sudut sepihak.

$[(s, t), b]$ karena berada di bawah garis b . (area VII, VIII & IX).

a. $\angle 7$ dan $\angle 12$.

sudut dalam berseberangan $[(a, b), t]$ karena berada di antara garis a dan b (area. IV, V, VI) berbeda sisi jika di pandang melalui garis t .

Halaman: 5/19

Nomor 2 (Lanjutan)

b. $\angle 1$ dan $\angle 3$ sudut sepihak (sehadap).

$[(s, t), a]$

c. $\angle 3$ dan $\angle 16$ sudut luar berseberangan

$[(a, b), t]$.

Nomor 3

2 garis s dan t dipotong oleh garis b

$\Rightarrow [(s, t), b]$

a. Pasangan sudut yang sehadap

$= \{ (9, 11), (10, 12), (13, 15), (14, 16) \}$.

b. pasangan sudut yang dalam berseberangan

$= \{ (10, 15), (11, 14) \}$.

c. Pasangan sudut yang luar berseberangan

$= \{ (9, 16), (12, 13) \}$.

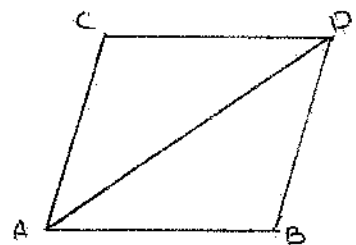
d. Pasangan sudut yang dalam sepihak

$= \{ (10, 11), (14, 15) \}$.

e. Pasangan sudut yang luar sepihak.

$= \{ (9, 12), (13, 16) \}$.

Nomor 4



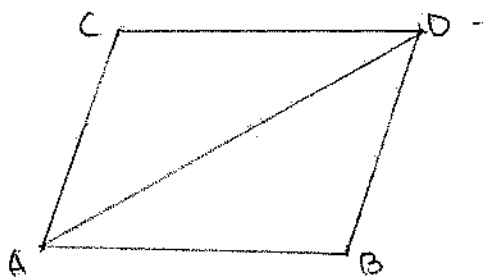
a. $[(AB, CD), AD]$

\Rightarrow sudut dalam berseberangan dengan $\angle BAD$ adalah $\angle CDA$ //

b. $[(AC, BD), AD]$

\Rightarrow sudut yang dalam sepihak dengan $\angle CAD$ adalah $\angle CDA$ //

—||— Nomor 4 (Lanjutan) —||—||—||—||—



c. $[(AB, CD), AC]$.

\Rightarrow sudut dalam sepihak dengan $\angle BAC$ adalah $\angle ACD$.

dalam: sama-sama berada di antara garis AB dan CD .

sepihak: sama-sama berada di kanan garis AC .

d. $[(AC, BD), AD]$.

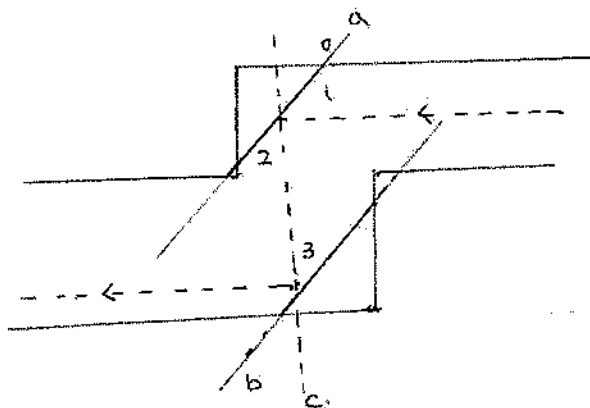
\Rightarrow sudut dalam berseberangan dengan $\angle BDA$

• dalam: sama-sama berada di antara garis AC dan BD .

• berseberangan: berbeda posisi yang dibatasi oleh AD .

$\therefore \angle CAD //$.

—||— Nomor 5 —||—||—||—||—



—||— Nomor 5 (Lanjutan) —||—||—||—||—

sepasang sudut yang mempunyai posisi dalam berseberangan yaitu $\angle 2$ dan $\angle 3$ berdasarkan $[(a, b), c]$.

• dalam: berada di antara garis a dan b .

• berseberangan:

$\angle 2$ ada di sebelah kiri garis c , dan

$\angle 3$ ada di sebelah kanan garis c .

— Nomor 1 —

a. $\angle P$ dan 60° dalam berseberangan

$$\Rightarrow \angle P = 60^\circ //$$

$\angle P$ dan $\angle Q$ berpelurus

$$\Rightarrow \angle Q = 180^\circ - \angle P = 180^\circ - 60^\circ = 120^\circ //$$

b. $\angle S$ dan 130° adalah sudut-sudut dalam berseberangan $\Rightarrow \angle S = 130^\circ //$

$\angle t$ dan $\angle S$ saling berpelurus

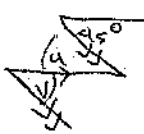
$$\Rightarrow \angle t = 180^\circ - \angle S = 180^\circ - 130^\circ = 50^\circ //$$

c. $\angle d = 60^\circ$ (dalam berseberangan)

$$\underbrace{180^\circ - (37^\circ + 60^\circ)}_{\text{sudut segitiga}} = \underbrace{180^\circ - (d + c)}_{\text{berpelurus}}$$

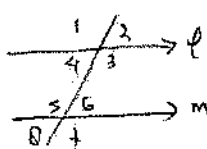
$$\Rightarrow c = 37^\circ \text{ (atau sudut sehadap)}$$

d.



$$\begin{aligned} \angle a &= \angle v \text{ (dalam berseberangan)} \\ \angle a &= 45^\circ \text{ (dalam berseberangan)} \\ \Rightarrow \angle v &= 45^\circ // \end{aligned}$$

— Nomor 2 —



$$\begin{aligned} \angle 4 &= 65^\circ \\ \Rightarrow \angle 1 &= 180^\circ - 65^\circ = 115^\circ \\ &\text{(berpelurus dengan } \angle 4) \end{aligned}$$

$\angle 2 = \angle 4 = 65^\circ$ (bertolak belakang)

$\angle 3 = \angle 1 = 115^\circ$ (bertolak belakang)

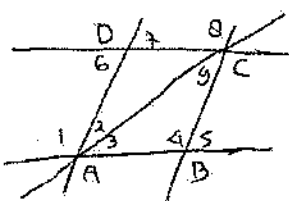
$\angle 5 = \angle 1 = 115^\circ$ (sehadap)

$\angle 6 = \angle 2 = 65^\circ$ (sehadap)

$\angle 7 = \angle 3 = 115^\circ$ (sehadap)

$\angle 8 = \angle 4 = 65^\circ$ (sehadap)

— Nomor 3 —



$$\begin{aligned} \angle ADC &= 110^\circ \\ \angle ACD &= 20^\circ \end{aligned}$$

— Nomor 3 (Lanjutan) —

$$\angle 1 = \angle ADC = 110^\circ \text{ (dalam berseberangan)}$$

$$\begin{aligned} \text{b. } \angle 2 &= 180^\circ - (\angle ADC + \angle ACD) \\ &= 180^\circ - (110^\circ + 20^\circ) \\ &= 180^\circ - 130^\circ = 50^\circ \end{aligned} \quad \left. \begin{array}{l} \text{sudut-sudut} \\ \text{segitiga} \end{array} \right\}$$

c. $\angle 3 = \angle ACD = 20^\circ \Rightarrow$ Dalam berseberangan

d. $\angle 4 = \angle 1 = 110^\circ$ (sehadap)

e. $\angle 5 = (180^\circ - \angle 4 = 180^\circ - 110^\circ = 70^\circ)$ (berpelurus)

f. $\angle 6 = (180^\circ - \angle 1 = 70^\circ)$ (dalam sepihak)

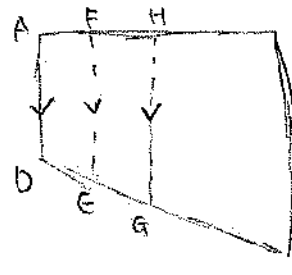
g. $\angle 7 = \angle 6 = 70^\circ$ (bertolak belakang)

h. $\angle 8 = \angle 4 = 110^\circ$ (sehadap)

i. $\angle 9 = \angle 2 = 50^\circ$ (dalam berseberangan)

— Nomor 4 —

Bentuk perumahan



Karena $AD \parallel FE$,

\Rightarrow AD dan FE

dipotong oleh

garis DC

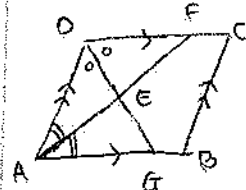
$\angle ADC, \angle CEF, \angle CGH$

sama-sama menghadap arah jang.

sama yaitu menghadap $\angle B$ (\Rightarrow)

$$\angle ADC = \angle CEF = \angle CGH = 105^\circ$$

— Nomor 5 —



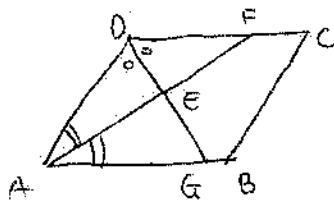
$$\Rightarrow \angle ADC = 124^\circ = \angle ADG + \angle GDC$$

$$\angle ADG + \angle ADG = 124^\circ$$

$$2\angle ADG = 124^\circ$$

$$\text{a. } \angle ADG = 62^\circ //$$

— Nomor 5 (Lanjutan) —



$$\angle ADC = 129^\circ$$

$$\angle ADG = 62^\circ$$

b. $\angle DAF = \dots ?$

$$\angle DAF = \angle BAF, \angle DAF + \angle BAF = \angle BAD.$$

$$\Rightarrow \angle BAD = 2 \cdot \angle DAF.$$

• $\angle BAD + \angle ADC = 180^\circ \leftarrow$ Dalam sepihak.

$$2\angle DAF + 129^\circ = 180^\circ$$

$$2\angle DAF = 180^\circ - 129^\circ = 51^\circ$$

$$\angle DAF = 25.5^\circ$$

c. • $\angle DGB + \angle DGA = 180^\circ \leftarrow$ berpelurus

• $\angle DGA = \angle GDC \leftarrow$ dalam berseberangan

• $\angle GDC = \angle ADG = 62^\circ \leftarrow$ dari soal.

$$\Rightarrow \angle DGB + \angle DGA = 180^\circ$$

$$\angle DGB + \angle GDC = 180^\circ$$

$$\angle DGB + \angle ADG = 180^\circ$$

$$\angle DGB + 62^\circ = 180^\circ$$

$$\angle DGB = 180^\circ - 62^\circ = 118^\circ //$$