

SOAL TKA

1.) $A = \{1, 2, 3, 4, 5\}$

$B = \{0, 2, 4, 6, 8, 10, \dots\}$

$C = \{2, 3, 5, 7\}$

$(A \cap B) \cup C \Rightarrow A \cap B = \{2, 4\}$

$(A \cap B) \cup C = \{2, 3, 4, 5, 7\}$

(c.)

2.) $\frac{3^{\frac{2}{3}} \times 8^{\frac{3}{2}}}{2^{\frac{5}{2}} \times 9^{\frac{5}{6}}} = \frac{3^{\frac{2}{3}} \times (2^3)^{\frac{3}{2}}}{2^{\frac{5}{2}} \times (3^2)^{\frac{5}{6}}} = \frac{3^{\frac{2}{3}} \times 2^{\frac{9}{2}}}{2^{\frac{5}{2}} \times 3^{\frac{5}{2}}} = 2^{\frac{9}{2} - \frac{5}{2}} \cdot 3^{\frac{2}{3} - \frac{5}{2}}$
 $= 2^2 \cdot 3^{-1} = \frac{4}{3}$

(c.)

3.) $a \oslash b = \frac{(a-b)^2 + 2ab}{a+b} = \frac{a^2 - 2ab + b^2 + 2ab}{a+b}$
 $= \frac{a^2 + b^2}{a+b}$

$a \oslash 2 = 5$

$\hookrightarrow \frac{a^2 + 2^2}{a+2} = 5$

$a+2$

$a^2 + 4 + 5a + 10 = 0$

$a^2 - 5a - 6 = 0$

$(a-6)(a+1)$

$\Downarrow$

$a=6 \vee a=-1$

M

TM

Jadi, $a = 6$.

Per. 1 : a kelipatan 3 ✓

Per. 2 : a bil. prima ✗

Per. 3 : $a \oslash 2 = 6$ ✓

$\frac{6^2 + 0^2}{6+0} = \frac{36}{6} = 6$

A.) $y = 0,02x - 39,9 \rightarrow x$ tahun, y peningkatan suhu

$\hookrightarrow 0,7 = 0,02x - 39,9$

$0,7 + 39,9 = 0,02x$

$x = \frac{40,6}{0,02}$

$x = 2030$

(D.)

G.) $u_1 = 400$

$u_5 = a + 4b$

$u_2 = 550$

$= 400 + 150(4)$

$b = 150$

$= 400 + 600$

$u_5 = \dots$

$= 1000$

(C.)

5.) Fira pendaftar ke - 50. Membayar 180.000.

$\hookrightarrow y = 0,9x$

$180.000 = 0,9x$

$x = 200.000$

Karena fira adalah pendaftar ke - 50, maka Andi, Budi, cici dan Dini tidak mendapat diskon 50 pelanggan pertama. maka mereka hanya mendapatkan Diskon siswa prestasi.

$g(y) = \begin{cases} 0,7y \rightarrow > 90 \\ 0,8y \rightarrow 85 - 90 \end{cases}$

★ Budi dan Dini > 90

$\hookrightarrow 0,7(200.000) = 140.000$

★ Andi dan cici < 90

$\hookrightarrow 0,8(200.000) = 160.000$

(D.)

7.) Kadar asam urat pasien 13 mg/dL

Obat menurunkan kadar asam urat 20%

- Pasien mulai nyaman $\rightarrow < 7 \text{ mg/dL}$

- Pasien sembuh klinis $\rightarrow < 5 \text{ mg/dL}$

Kapan pasien nyaman tapi belum sembuh secara klinis.

☐ Hari ke-2

☒ Hari ke-5

☐ Hari ke-3

☐ Hari ke-6

☒ Hari ke-4

↳ Deret geometri :

$$u_n = a(1-r)^{n-1}$$

$$\text{Hari 1} = 13 \text{ mg}$$

$$\text{Hari 2} = 13 \times 0,8 = 10,4$$

$$\text{Hari 3} = 10,4 \times 0,8 = 8,32$$

$$\text{Hari 4} = 8,32 \times 0,8 = 6,656 \rightarrow \text{Nyaman}$$

$$\text{Hari 5} = 6,656 \times 0,8 = 5,3248 \rightarrow \text{Nyaman}$$

$$\text{Hari 6} = 5,3248 \times 0,8 = 4,25984 \rightarrow \text{sembuh klinis}$$

$$\begin{aligned} 8.) \quad \overline{AB} &= 2x - 4y \geq -8 \quad \rightarrow \quad \frac{2x - 4y \geq -8}{2} \quad : 2 \\ 2(0) - 4(0) &\dots -8 \quad \quad \quad x - 2y \geq -4 \\ 0 &\geq -8 \end{aligned}$$

$$\begin{aligned} \overline{BC} &= 2x + 2y \leq 4 \quad \rightarrow \quad \frac{2x + 2y \leq 4}{2} \quad : 2 \\ 2(0) + 2(0) &\dots 4 \quad \quad \quad x + y \leq 2 \\ 0 &\leq 4 \end{aligned}$$

$$\overline{AC} = y \geq 0$$

(B)

9.) Buket A : $2M + 3L + A = 85.000$

Buket B : $M + 2L + 2A = 70.000$

Buket C : $3M + A + A = 75.000$

Dit : $C + 2L + A = \dots ?$

↳ $A + B - C = 2M + 3L + A = 85.000$

$M + 2L + 2A = 70.000$

$- 3M - L - A = -75.000$

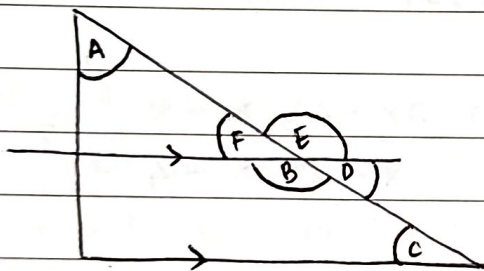
$4L + 2A = 80.000$

$2L + A = 40.000$

Buket C + $2L + A = 75.000 + 40.000$
 $= 115.000$

(D.)

10.)



$\angle F = \angle D = \angle C$

$\angle B = \angle E$

☐ $\angle A$ dan $\angle B$

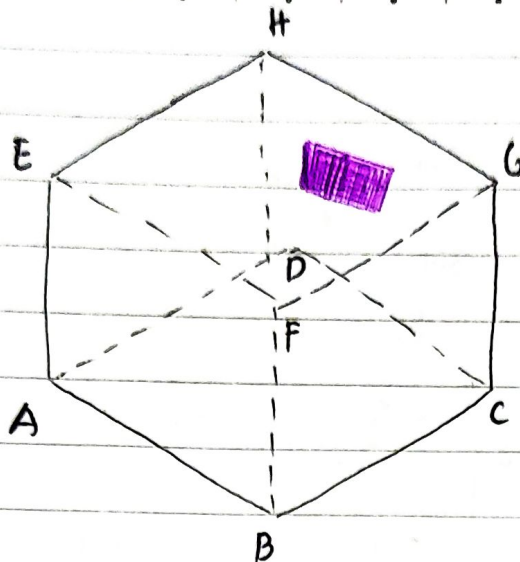
☐ $\angle A$ dan $\angle E$

☒ $\angle B$ dan $\angle C$

☒ $\angle B$ dan $\angle D$

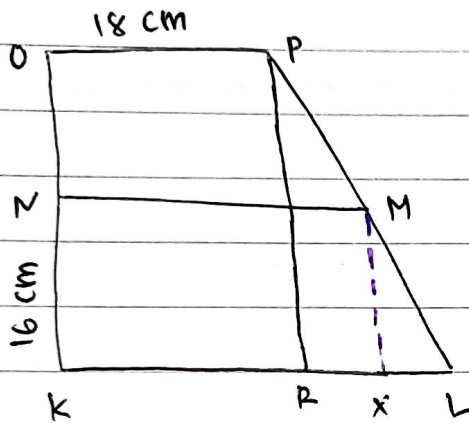
☒ $\angle E$ dan $\angle C$

11.)



- ☐ CDHG
- ☒ BCGF
- ☐ ABFE
- ☐ BCFA
- ☒ ADHE

12.)



Panjang LM = ... ?

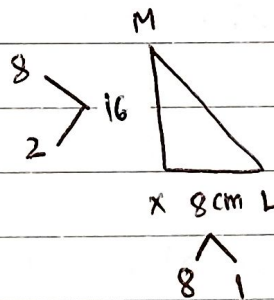
$$KL = 32 \text{ cm}$$

$$\frac{KL}{NM} = \frac{NM}{OP}$$

$$\frac{32}{NM} = \frac{NM}{18}$$

$$(NM)^2 = 576$$

$$NM = 24 \text{ cm}$$



$$LM = \sqrt{16^2 + 8^2}$$

$$LM = 8\sqrt{2^2 + 1^2}$$

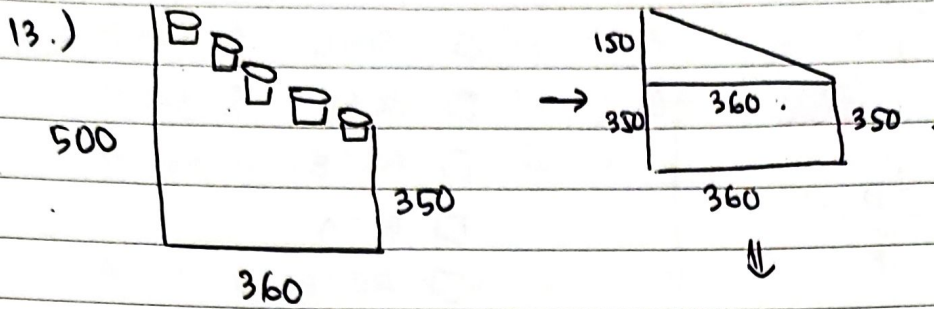
$$LM = 8\sqrt{5}$$

B.

$$KL - NM = XL$$

$$32 - 24 = XL$$

$$XL = 8$$



$$\Rightarrow \frac{150}{30} = 5.$$

$$\frac{360}{30} = 12.$$

$$X = 13 \times 30$$

$$= 390.$$

$X = 13 \rightarrow$ Triple pythagoras

Kunyit = 26 cm $\rightarrow 390 : 26 = 15$ 5, 12, 13.

Jahe = 15 cm $\rightarrow 390 : 15 = 26$

Lengkuas = 30. $\rightarrow 390 : 30 = 13$.

- ☒ Ada 25 tanaman jahe
- ☒ Ada 15 tanaman kunyit
- ☒ Ada 13 tanaman lengkuas.

14.) $B' = (-4, 1)$.

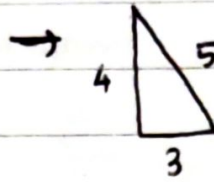
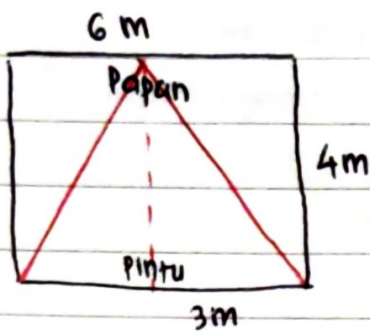
$B \xrightarrow{\text{refleksi } y=1} \xrightarrow{\text{rotasi } 180^\circ} B'.$

(B.)

$B' \text{ dirotasi } 180^\circ \Rightarrow (x, y) \rightarrow (-x, -y)$
 $(-4, 1) \rightarrow (4, -1)$

direfleksikan $y = 1 \rightarrow (4, -1) \text{ direfleksikan } y = 1 \text{ jadi } (4, 3).$

15.)



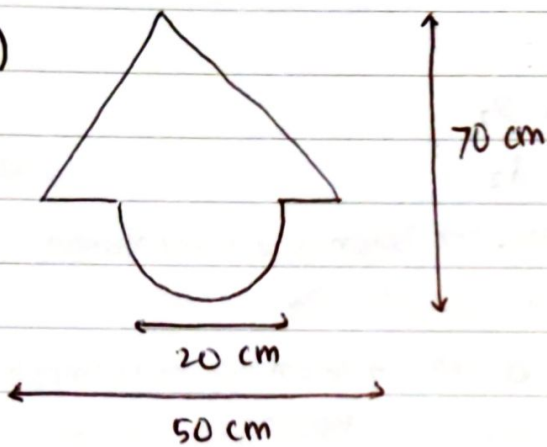
maka panjang tali pertama = 5 m.

Karena besar daerahnya sama, maka Panjang tali kedua = tali pertama.

$$5 + 5 = 10 \Rightarrow 20 - 10 = 10.$$

(B.)

16.)



Sepanjang ornamen dipasang kayu.
Akan dibuat 2 ornamen, berapa Panjang kayu!

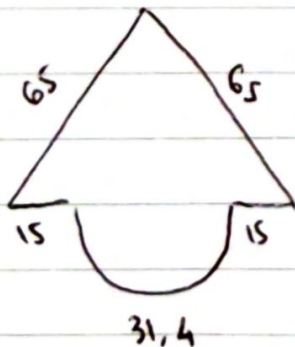
$$\begin{aligned} & \Rightarrow \sqrt{60^2 + 25^2} \\ & = \sqrt{3600 + 625} \\ & = \sqrt{4225} \\ & = 65. \end{aligned}$$

$$\rightarrow \text{D lingkaran} = 20 \text{ cm} \Rightarrow r = 10 \text{ cm}.$$

$$\text{Tinggi } \Delta = 70 - 10 = 60 \text{ cm}.$$

$$\text{Panjang } \Delta = 50 \text{ cm}$$

$$K \cdot \frac{1}{2} \Delta = \frac{1}{2} (2 \cdot \pi \cdot r) = 3,14 \times 10 = 31,4.$$



$$K = 65 + 65 + 15 + 15 + 31,4 = 191,4.$$

$$2K = 2 (191,4) = 382,8.$$

(D.)