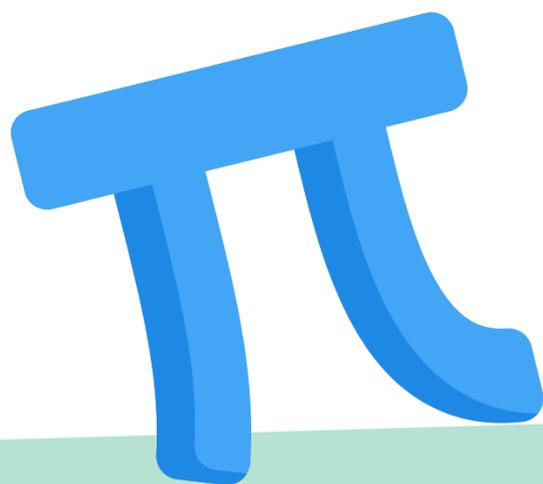
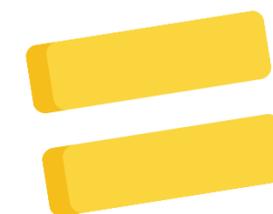
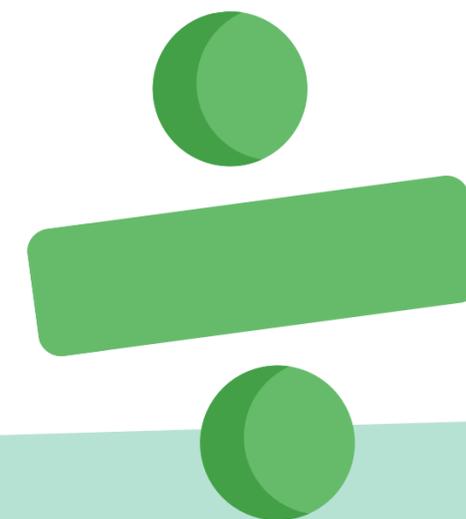


Mat x Tik



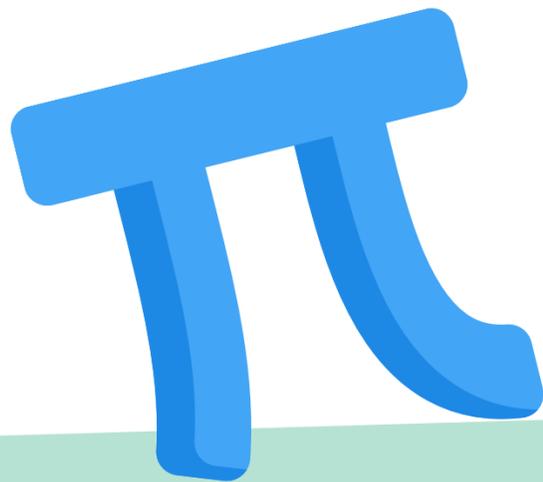
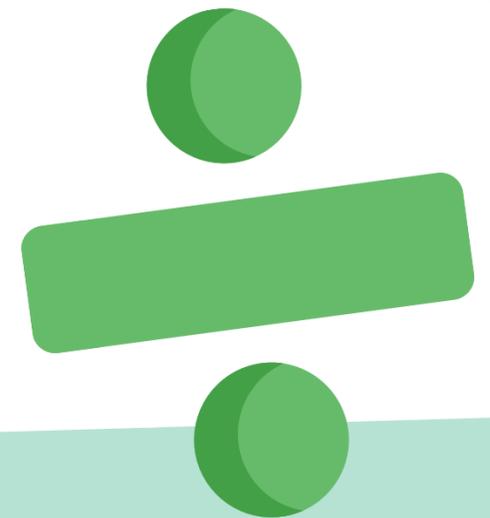
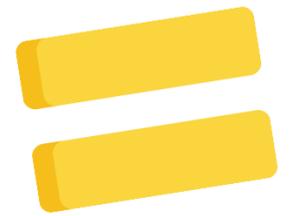
Dimensi tiga





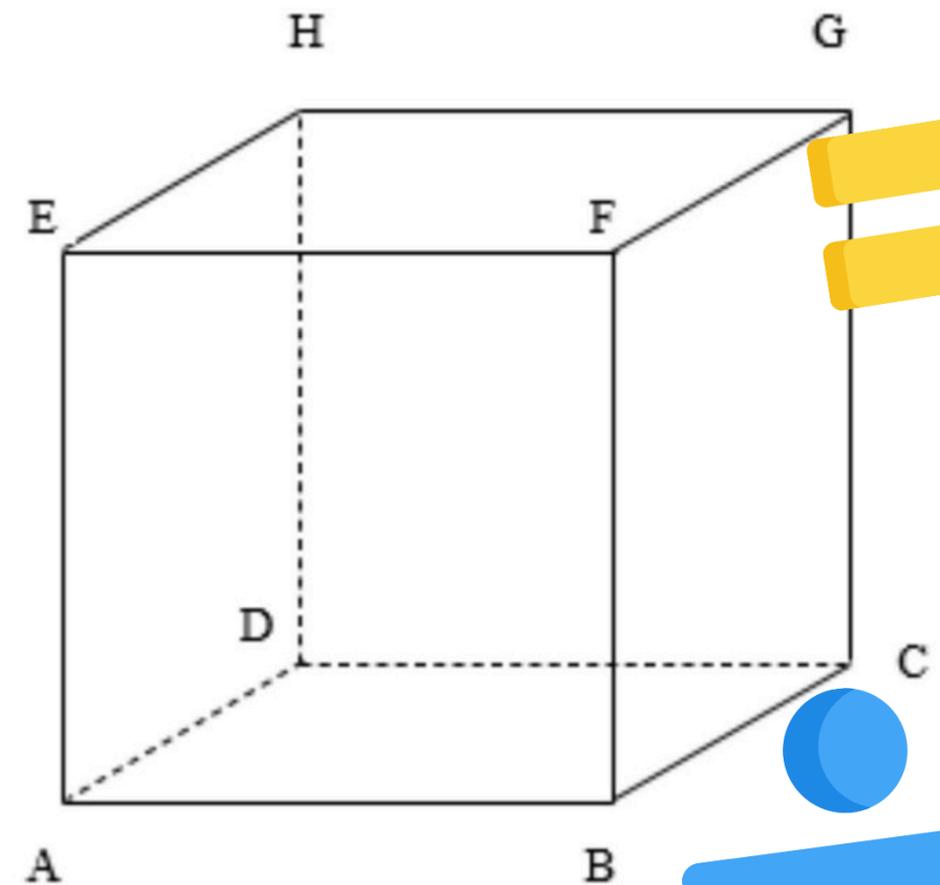
Kelompok Nanda:

- Nadine/XII IPS 3/1
- Ryumi/XII IPS 3/10
- Nanda/XII IPS 3/11
- Yasinta/XII IPS 3/36

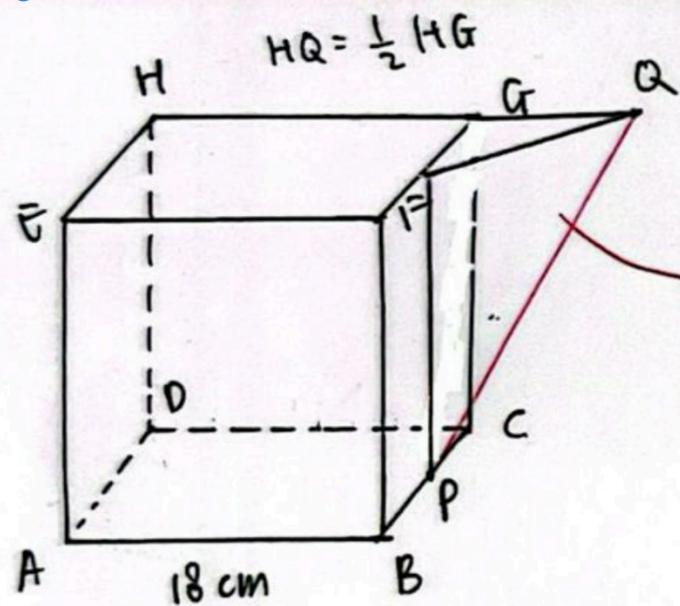


Pertanyaan 1

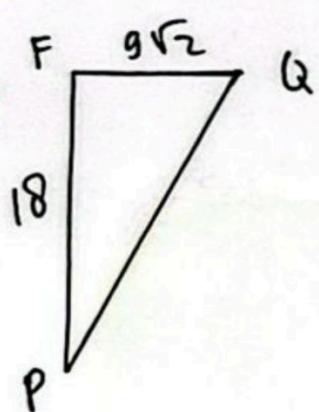
Diberikan kubus ABCD.EFGH dengan panjang rusuk 18 cm. Titik P pada pertengahan BC dan titik Q pada perpanjangan HG. Sehingga HG pada HQ:1/2 HB. Hitunglah jarak titik P ke Q



Langkah-langkah 1



Jarak P ke Q



$$FQ = \sqrt{(GQ)^2 + (FG)^2} = \sqrt{9^2 + 9^2} = 9\sqrt{2}$$

$$FP = BF = 18$$

$$PQ = \sqrt{(FQ)^2 + (FP)^2}$$
$$= \sqrt{(9\sqrt{2})^2 + 18^2}$$

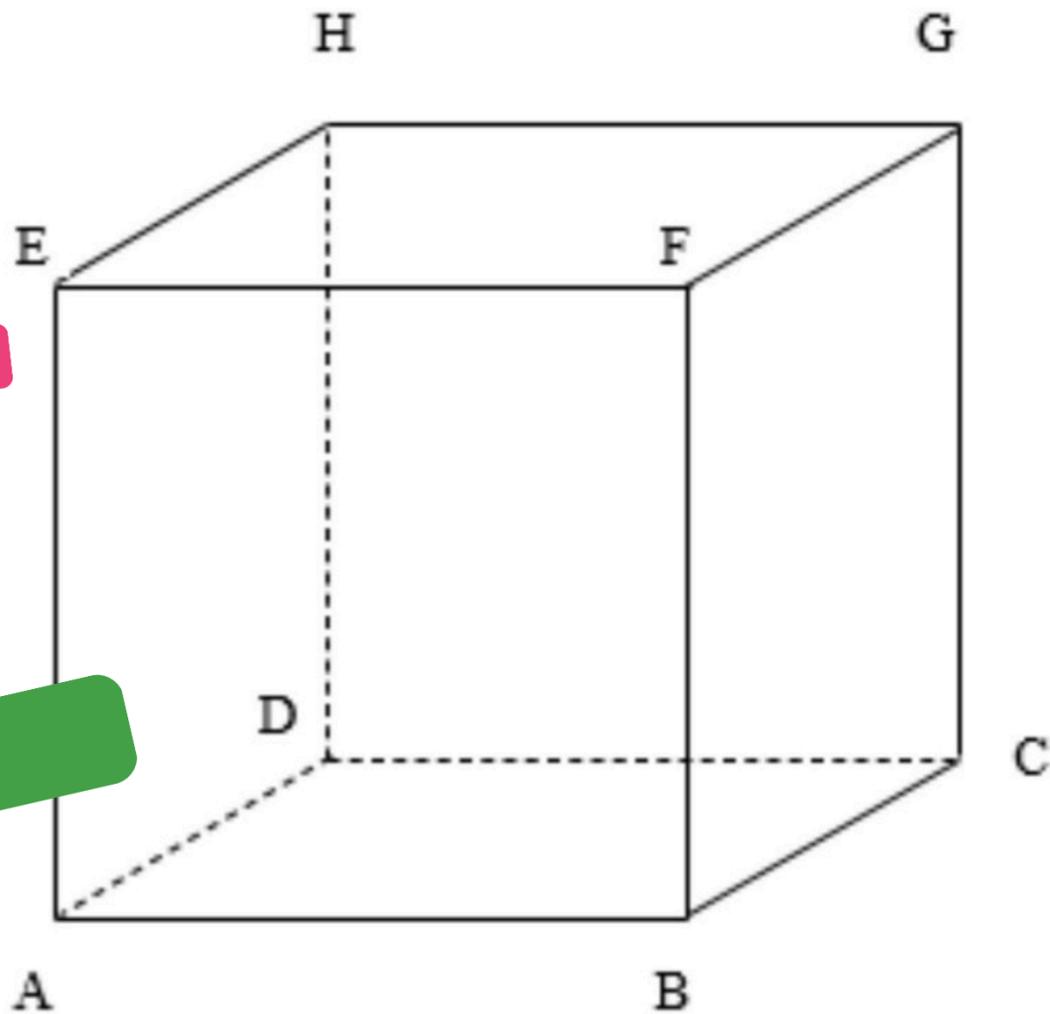
$$= \sqrt{162 + 324}$$

$$= \sqrt{486}$$

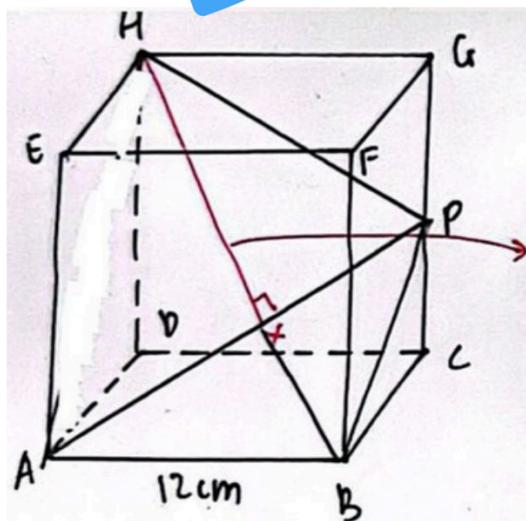
$$= 9\sqrt{6} \text{ cm}$$

Pertanyaan 2

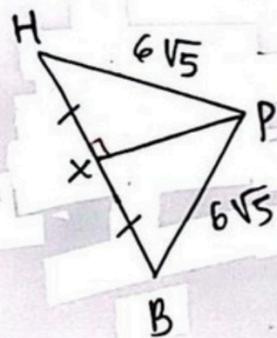
Diberikan kubus ABCDEFGH dengan panjang rusuk 12 cm. Titik p pada pertengahan CG. Hitunglah jarak titik H ke garis AP.



Langkah langkah 2



Jarak titik H ke AP = HX



$$\star PB = PH$$

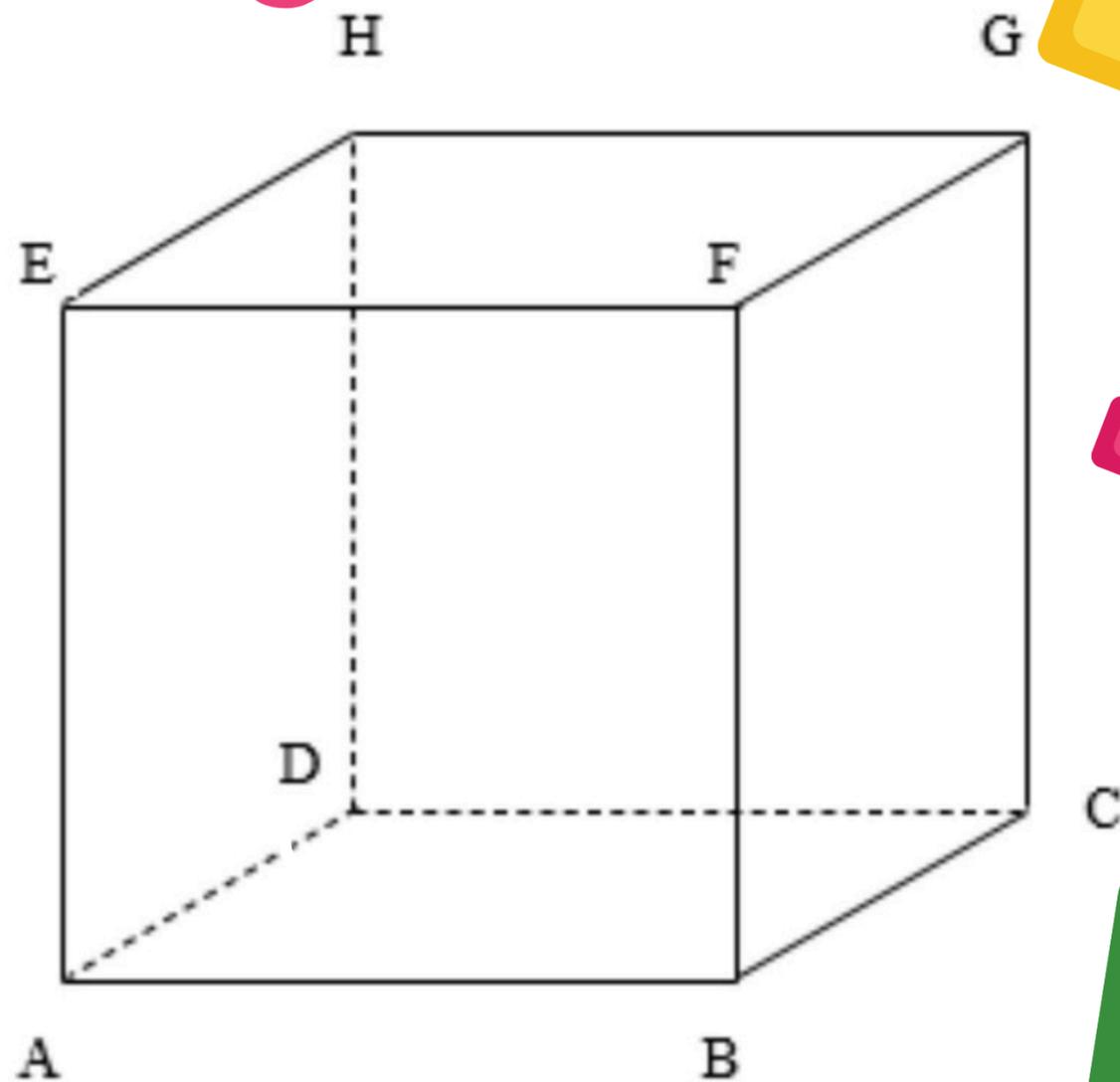
$$\begin{aligned}\star HP &= \sqrt{(GH)^2 + (GP)^2} = \sqrt{12^2 + 6^2} = \sqrt{144 + 36} \\ &= \sqrt{180} = \sqrt{36 \cdot 5} = 6\sqrt{5}\end{aligned}$$

$$\star HB = \sqrt{(DH)^2 + (BD)^2} = \sqrt{12^2 + (12\sqrt{2})^2} = 12\sqrt{3}$$

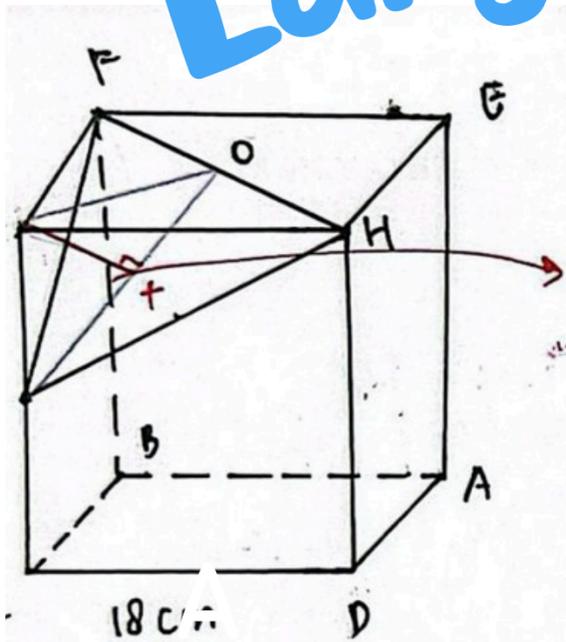
\star Karena Δ sama kaki maka garis tinggi membagi sama besar alas garis didepannya. Sehingga $HX = XB = \frac{1}{2} \cdot HB = 6\sqrt{3}$ cm

Pertanyaan 3

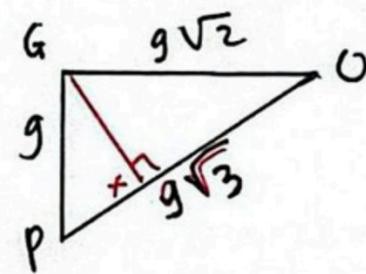
Diberikan kubus ABCDEFGH dengan panjang rusuk 18 cm. Titik p pada pertengahan CG. Hitunglah jarak titik G ke PFH.



Langkah langkah 3



Jarak G ke bidang PPH



$$GO = \frac{1}{2} EG = \frac{1}{2} \sqrt{18^2 + 18^2} = \frac{1}{2} \cdot 18\sqrt{2} = 9\sqrt{2}$$

$$GP = \frac{1}{2} CG = \frac{1}{2} \cdot 18 = 9$$

$$OP = \sqrt{(GO)^2 + (GP)^2} = \sqrt{(9\sqrt{2})^2 + 9^2} = 9\sqrt{3}$$

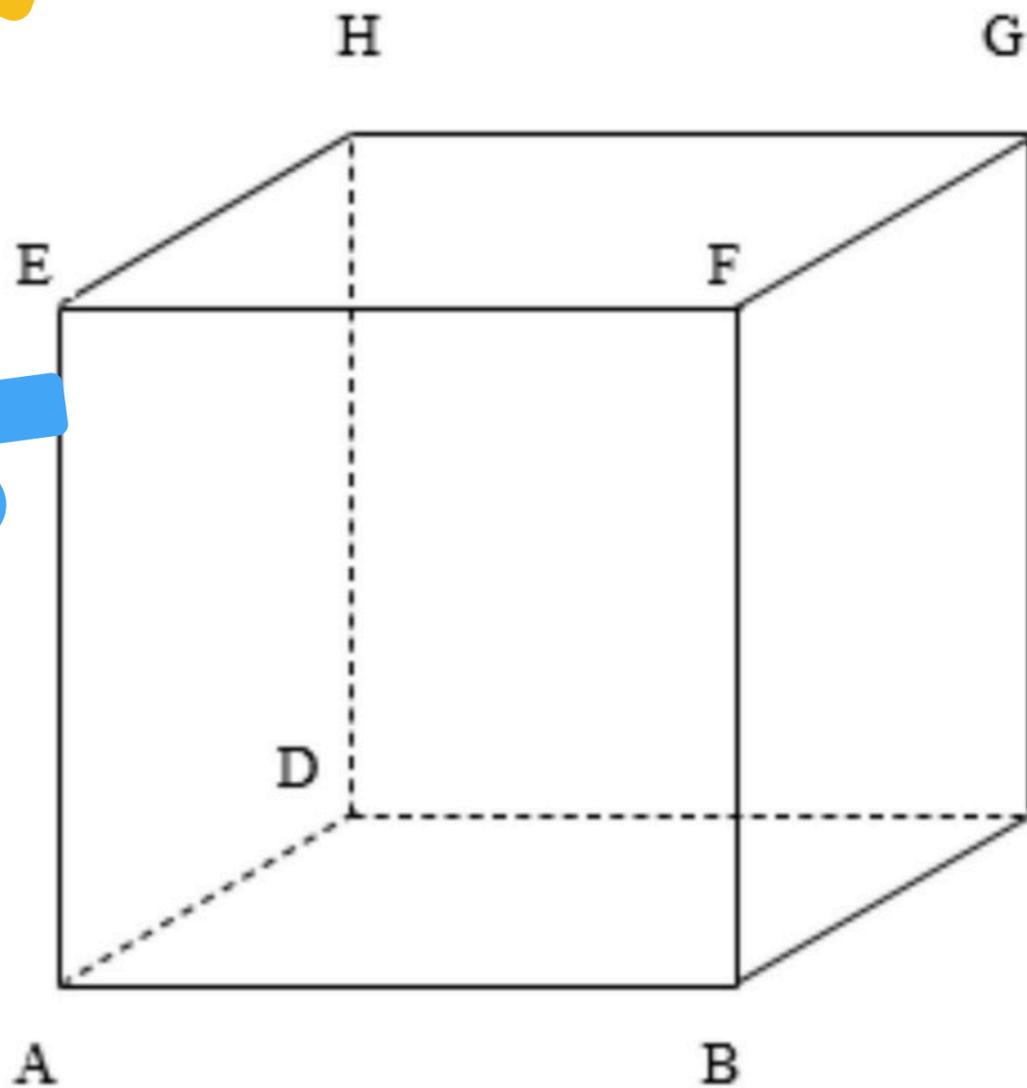
★ Mencari GX

$$L_{\Delta} = L_{\Delta}$$

$$\frac{1}{2} \cdot OP \cdot GX = \frac{1}{2} \cdot GP \cdot OG$$

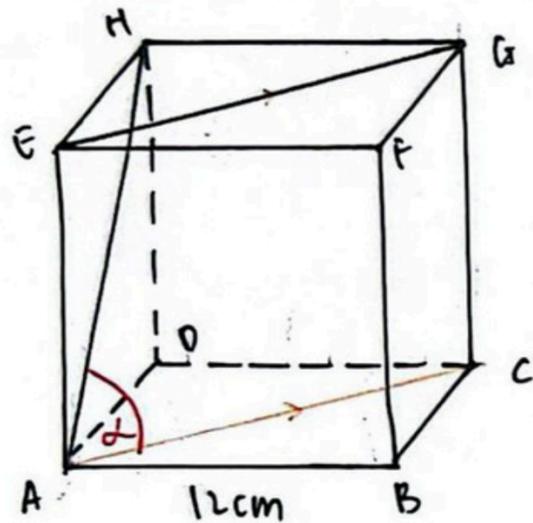
$$GX = \frac{9 \cdot 9\sqrt{2}}{9\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{9}{3} \sqrt{6} = 3\sqrt{6} \text{ cm} //$$

Pertanyaan 4



Diberikan kubus ABCDEFGH dengan panjang rusuk 12 cm. Hitunglah besar sudut antara garis AH dan EG

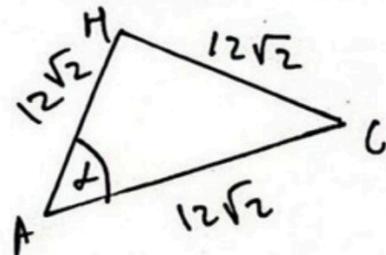
Langkah langkah 4



Sudut antara AH dan EG = α

- 1). Proyeksi garis EG ke bidang ABCD menjadi AC
- 2). Sudut antara AH dan EG = AH dan AC
- 3). Mencari α

Gunakan $\triangle ACH$



$$AH = \sqrt{DH^2 + AD^2} = \sqrt{12^2 + 12^2} = 12\sqrt{2}$$

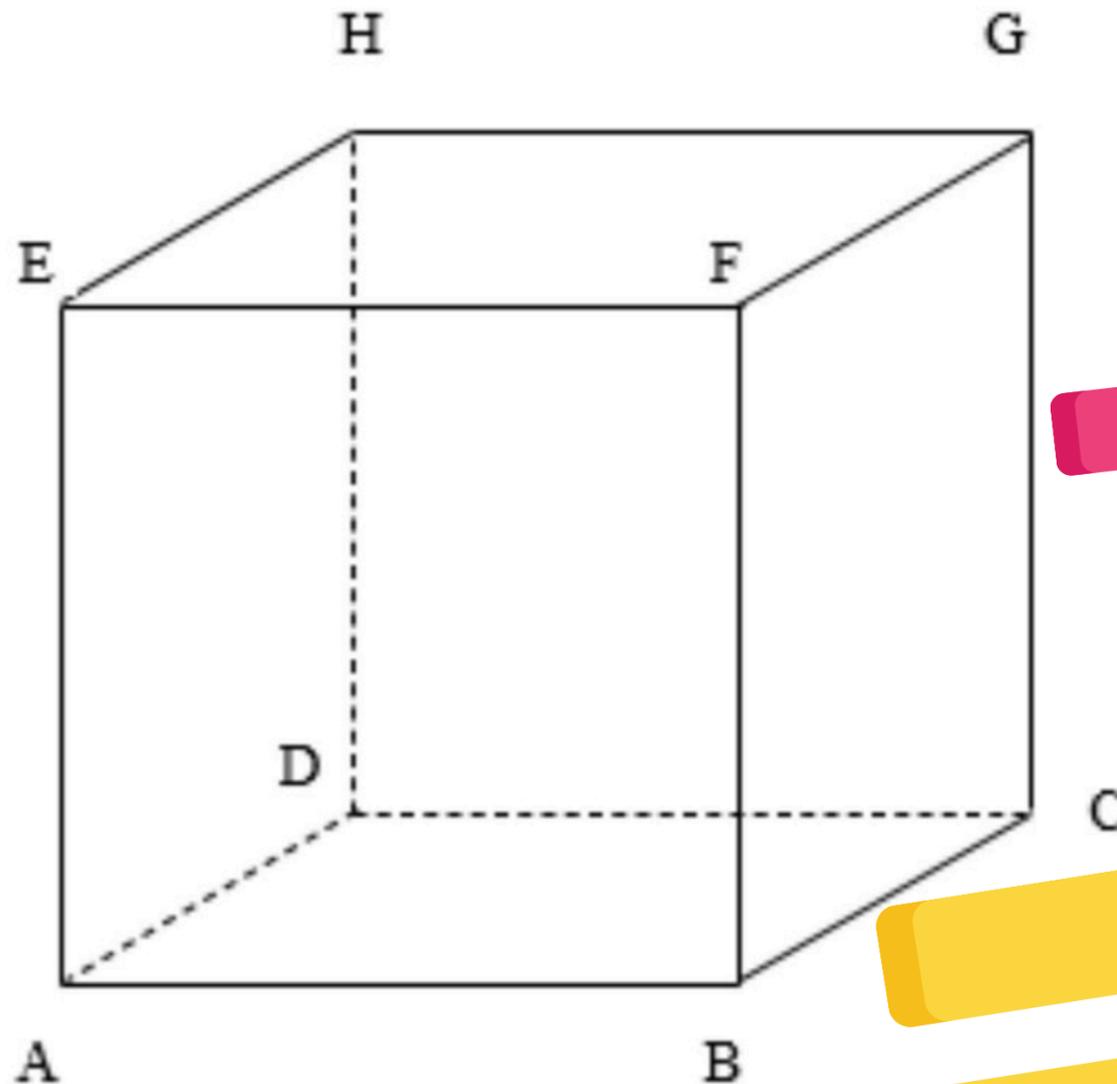
$$AH = HC = AC = \text{diagonal sisi} = 12\sqrt{2}$$

Dalam \triangle sama sisi, besar sudut sama

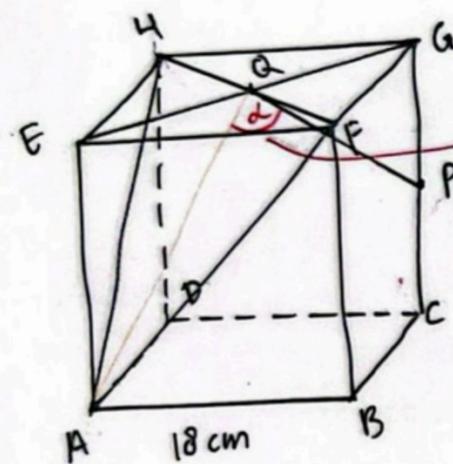
$$\text{maka } \alpha = \frac{180^\circ}{3} = 60^\circ //$$

Pertanyaan 5

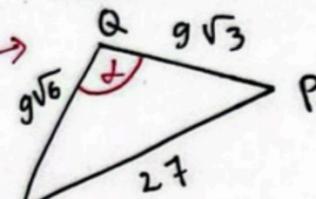
Diberikan kubus ABCDEFGH dengan panjang rusuk 18 cm. Titik p pada pertengahan CG dan titik Q di tengah bidang EFGH. Hitunglah besar sudut antara PQ dan bidang AFH



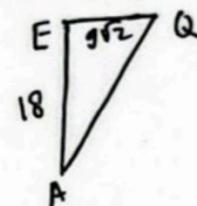
Langkah langkah 5



Sudut antara garis PQ dan bidang AFH = α



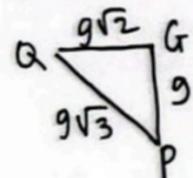
* Mencari AQ



$$EQ = \frac{1}{2} EG = \frac{1}{2} \sqrt{18^2 + 18^2} = 9\sqrt{2}$$

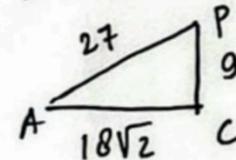
$$\begin{aligned} AQ &= \sqrt{18^2 + (9\sqrt{2})^2} \\ &= \sqrt{324 + 162} \\ &= \sqrt{486} \\ &= 9\sqrt{6} \end{aligned}$$

* Mencari QP



$$\begin{aligned} QP &= \sqrt{(9\sqrt{2})^2 + 9^2} \\ &= \sqrt{162 + 81} \\ &= \sqrt{243} \\ &= 9\sqrt{3} \end{aligned}$$

* Mencari AP



$$\begin{aligned} AP &= \sqrt{(18\sqrt{2})^2 + 9^2} \\ &= \sqrt{648 + 81} \\ &= \sqrt{729} \\ &= 27 \end{aligned}$$

* Mencari α

$$\begin{aligned} \cos \alpha &= \frac{(9\sqrt{6})^2 + (9\sqrt{3})^2 - 27^2}{2 \cdot 9\sqrt{6} \cdot 9\sqrt{3}} \\ &= \frac{486 + 243 - 729}{2 \cdot 81\sqrt{18}} \end{aligned}$$

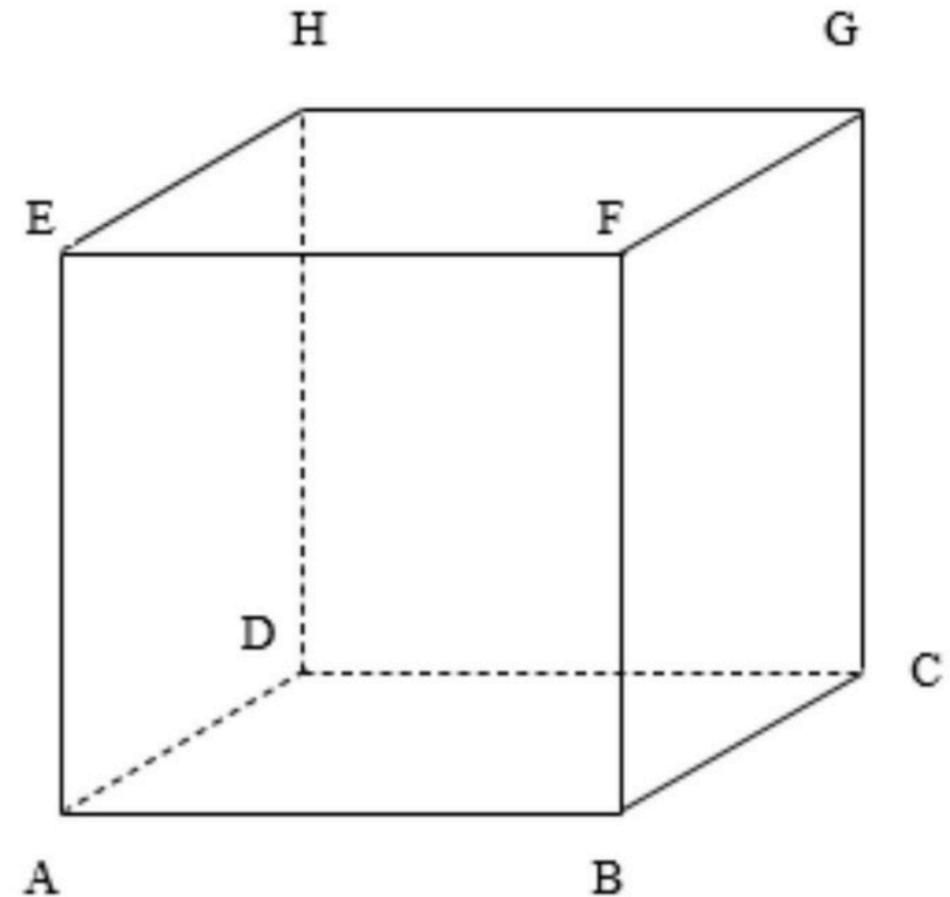
$$\cos \alpha = 0$$

$$\cos \alpha = \cos 90^\circ$$

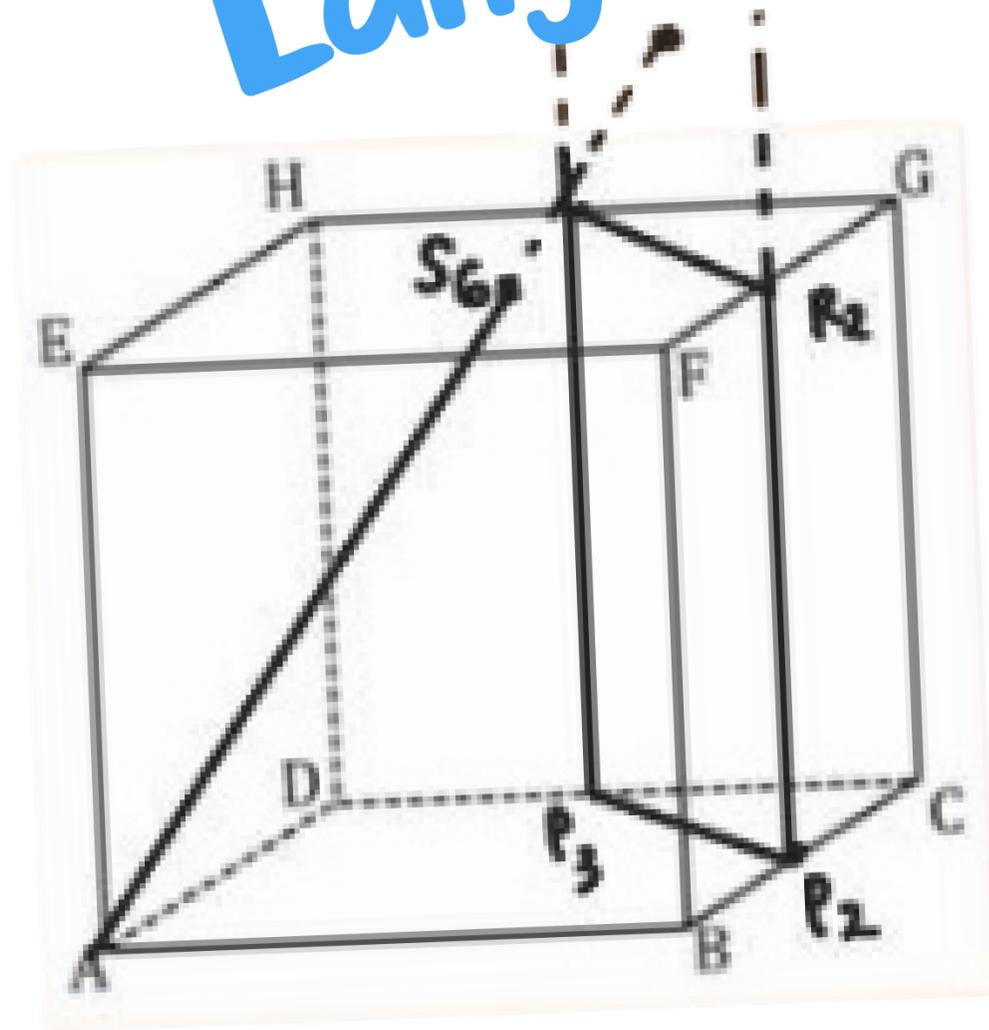
$$\alpha = 90^\circ //$$

Pertanyaan 6

Hubungan As6 dengan P2, P3, R3, R2 adalah?



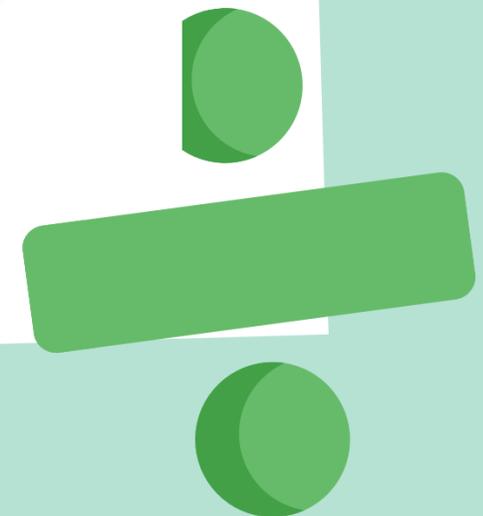
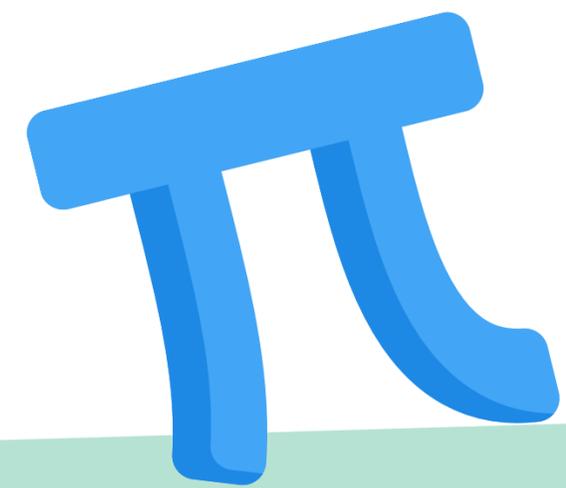
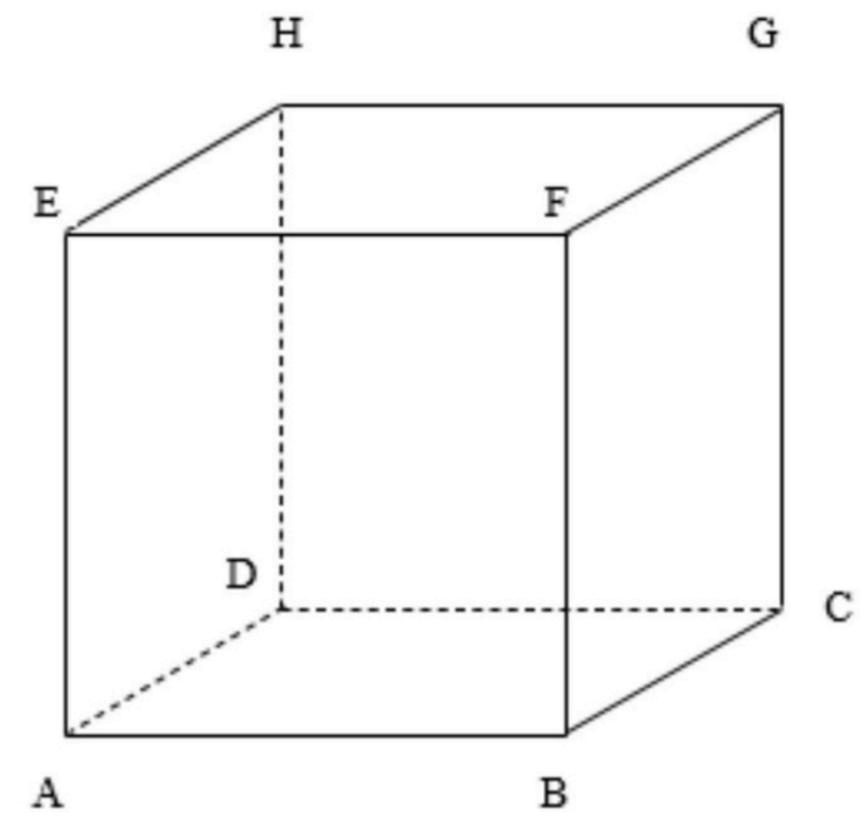
Langkah langkah 6



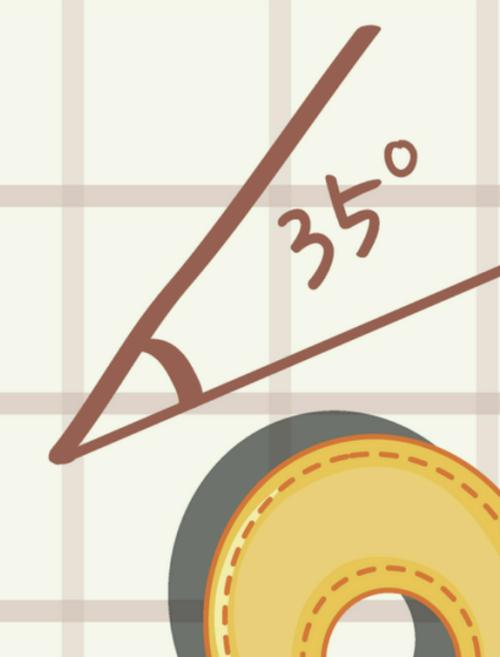
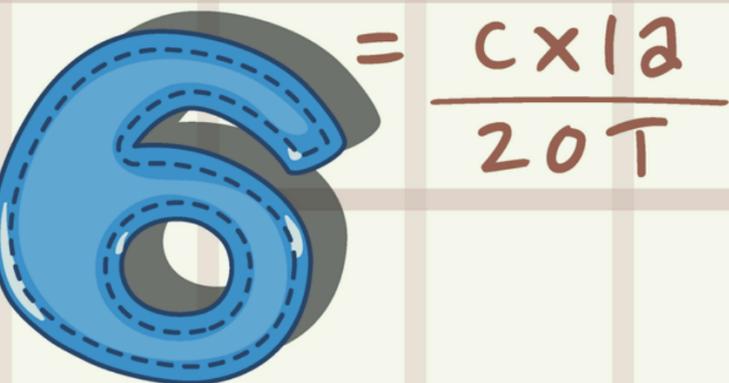
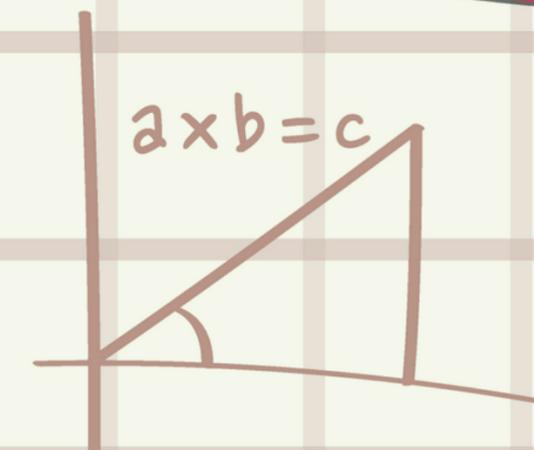
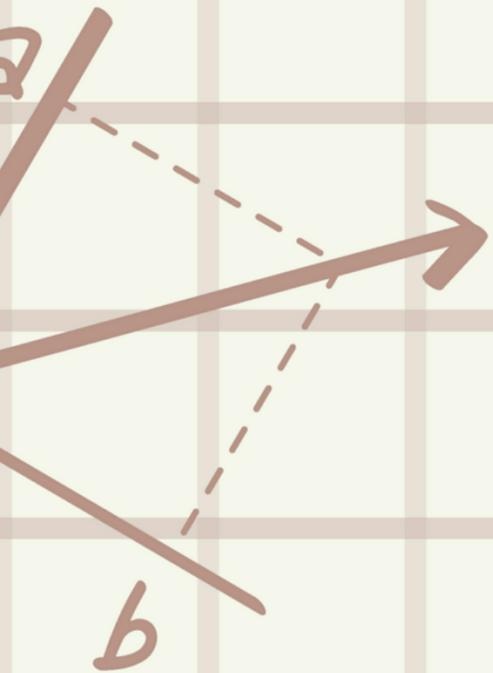
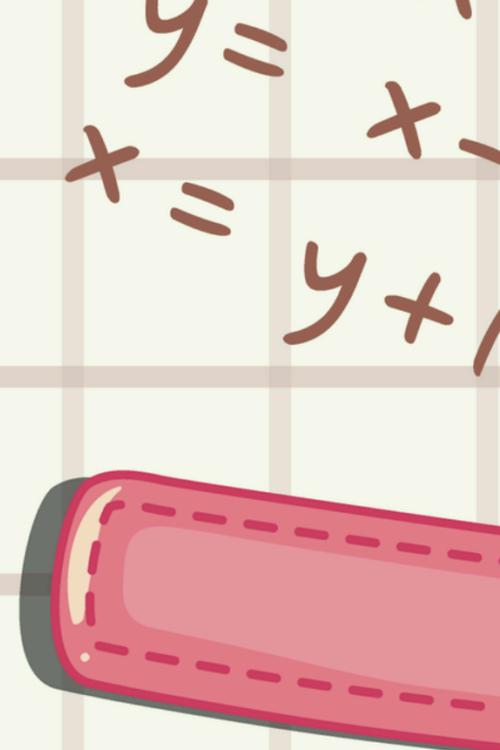
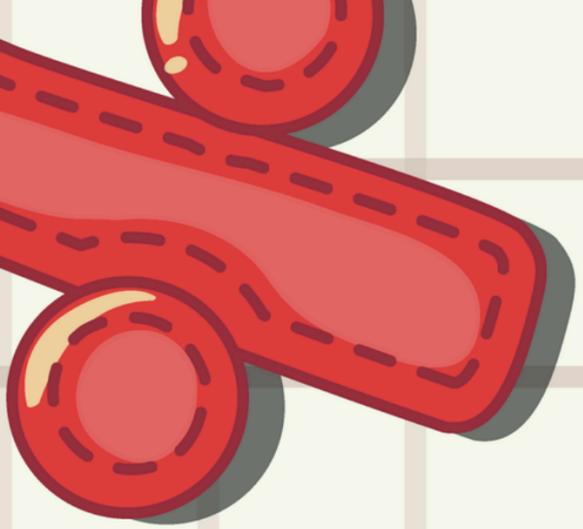
Hubungan As6
dengan P2, P3,
R3, R2 adalah
Berpotongan

Pertanyaan 7

Hubungan
bidang s2 s5 HF
dengan bdg
adalah?



Terimakasih atas
perhatiannya



G

ab^2