Tugas kalkulus pertemuan 3

Nandang Duryat -

TI . 23 . C4 UPB

PPT 3.1

① A(10,0)

$r = \sqrt{x^2 + y^2}$ $\tan\theta = \frac{x}{y}$

$r = \sqrt{100 + 0}$

$r = 10$ $\tan\theta = \frac{10}{0}$

A(10,0°) $\tan\theta = 0$

Koordinat kutub $\theta = 0°$

- Koordinat kartesius

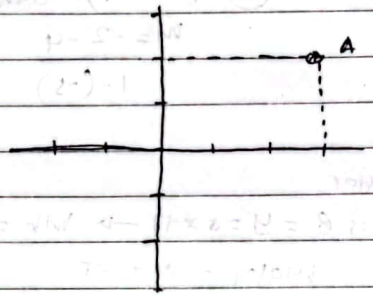
② koordinat kutub

A (4, 30°)

$x = r \cos\theta$ $y = r \sin\theta$

$x = 4 \cdot \frac{1}{2}\sqrt{3}$ $= 4 \cdot \frac{1}{2}$

$x = 2\sqrt{3}$ $y = 2$



PPt Slide 3.2

① Nyatakan persamaan garisnya : (y = mx + c)

ⓐ $2x - 5y = 7$

$2x - 7 = -5y$

$5y = -2x + 7$

$y = \frac{-2}{5}x + \frac{7}{5}$

ⓒ $-3 + 6y = 8$

$6y = 3x + 8$

$y = \frac{1}{2}x + \frac{4}{3}$

ⓑ $5x + 3y = -15$

$3y = -5x - 15$

$y = \frac{-5}{3}x - 5$

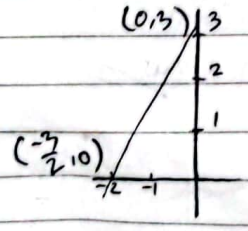
ⓓ $-5x + 4y = -10$

$4y = 5x - 10$

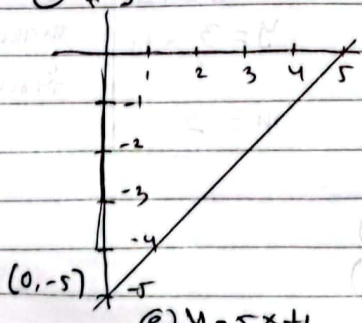
$y = \frac{5}{4} \times \frac{-5}{2}$

② Gambarlah Grafik

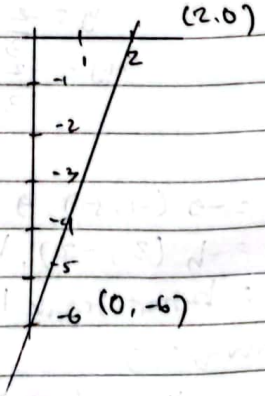
ⓐ $y = 2x + 3$



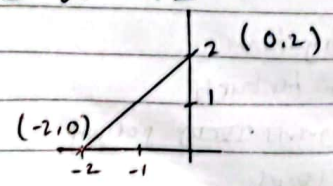
ⓑ $y = x - 5$



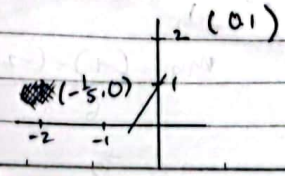
ⓒ $y = 3x - 6$



ⓓ $y = x + 2$



ⓔ $y = 5x + 1$



③ Tentukan Gradien

ⓐ (2,4) dan (5,8)

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{8-4}{5-2} = \frac{4}{3}$ //

ⓑ (-1,3) dan (3,5)

$m = \frac{5-3}{3-(-1)} = \frac{1}{2}$ //

ⓒ (1,3) dan (6,-2)

$m = \frac{2-3}{6-1} = \frac{1}{5}$ //

ⓓ (-5,4) dan (1,-2)

$m = \frac{-2-4}{1-(-5)} = -1$ //

④ ⓐ Dik : kedua garis sejajar

persamaan garis B = $y = 5x + 7 \rightarrow m_b = 5$

Jawab : $m_a = m_B$ maka $= m_x = 5$

$y = 5x + 7$

↳ Gradien

ⓑ Dik : kedua garis tegak lurus

persamaan garis a : $y = 5x - 2 \rightarrow m_a = 5$

Jawab : $m_\perp = \frac{-1}{m_b}$

$m_\perp = -\frac{1}{5}$ //

ⓒ Diketahui : garis g = $2x + 3y = 6$

garis h = $3x - 2y = -2$

Dit : sejajar / tegak lurus ?

Jawab : garis g

$3y = -2x + 6$

$y = \frac{-2}{3}x + 2$

$m_g = \frac{-2}{3}$

garis h

$2y = 3x + 2$

$y = \frac{3}{2}x + 1$

$m = \frac{3}{2}$

Rumus Gradien tegak lurus

$m_g \cdot m_h = -1$

maka, kedua garis tersebut tegak lurus //

ⓓ Dik : -g (-1,5), g (2,-4)

: -h (3,-2), h (6,-1)

Dit : benar tegak lurus ?

Jawab : g

$m_g = \frac{(-4)-5}{2-(-1)}$

$= -3$

h

$m_h = \frac{(-1)-(-2)}{6-3}$

$= \frac{1}{3}$

dari pernyataan tersebut terbukti kedua garis ~~turus~~ saling tegak lurus //

ppt Slide 3.3

① tentukan Gradien !

ⓐ $2y = 5x - 1$

$y = \frac{5}{2}x - \frac{1}{2}$

$m = \frac{5}{2}$

ⓑ $3x - 4y = 16$

$4y = 3x - 16$

$y = \frac{4}{3}x - 10$

$m = \frac{4}{3}$

hal 13

① Dik = (0,0) dan (3,2)

Dit = mk = ?

Jawab = $m_k = \frac{y_2}{x_2} = \frac{2}{3}$

② Dik : (0,0) dan (-3,3)

Dit : m = ?

Jawab : $m_1 = \frac{3}{3} = 1$

hal 15

① ~~Dit~~ tentukan gradien !

ⓐ A (1,2) dan B (3,0)

$m = \frac{0-2}{3-1} = -1$

ⓑ C (-3,1) dan D (-2,-5)

$m = \frac{(-5)-1}{(-2)-(-3)} = -6$

hal 17

① Dik melalui titik (3,5)

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

Dit : pers. garis. ?

Jwb : $y - 5 = \frac{1}{2}(x - 3)$

$y = \frac{1}{2}x + \frac{7}{2}$

② Dik = Melalui titik (-2,3)

$m = 2$

Dit = Pers. garis = ?

Jwb : $y - 3 = 2(x - (-2))$

$y = 2x + 1$

hal 19

① (0,1) dan (1,-6)

$\frac{y - y_1}{y_2 - y_1} = \frac{x - x_1}{x_2 - x_1}$

$\frac{y-1}{(-6)-1} = \frac{x-0}{1-0}$

$\frac{y-1}{-7} = \frac{x}{1}$

$y = -7x + 1$

② (2,3) dan (1,0)

$\frac{y-3}{0-3} = \frac{x-2}{1-2}$

$\frac{y-3}{-3} = \frac{x-2}{-1}$

$-y = -3x + 3$

$y = 3x - 3$