

Date _____

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Kelas: IAK - P2

Fungsi Kuadrat

13. $y = x^2 - 3x + 2$

a. Arah Parabola

$a > 0$ keatas

b. Diskriminan

$D = b^2 - 4ac$

$= (-3)^2 - 4(1)(2)$

$= 9 - 8 = 1$

$D > 0$ terbuka keatas dan memotong Sumbu x di dua titik yang berlainan

c. Titik Puncak

$$\left[\frac{-b}{2a}, \frac{-D}{4a} \right] = \left[\frac{3}{2(1)}, \frac{-1}{4(1)} \right] = (1.5, -0.25)$$

d. $x_{1,2} = \frac{3 \pm \sqrt{9-8}}{2} = \frac{3 \pm \sqrt{1}}{2}$

$x_1 = \frac{3+1}{2} = 2$

dan $x_2 = \frac{3-1}{2} = 1$

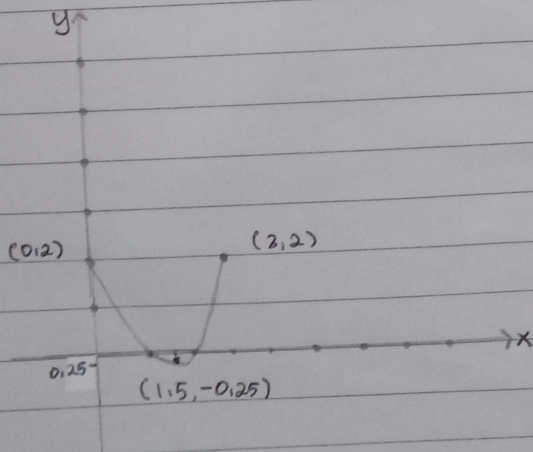
$y = x^2 - 3x + 2$

$x=0 \rightarrow y=2$ (0,2)

$x=1 \rightarrow y=1^2 - 3(1) + 2 = 0$ (1,0)

$x=2 \rightarrow y=2^2 - 3(2) + 2 = 0$ (2,0)

$x=3 \rightarrow y=3^2 - 3(3) + 2 = 2$ (3,2)



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69. $y = \frac{6}{x+1}$

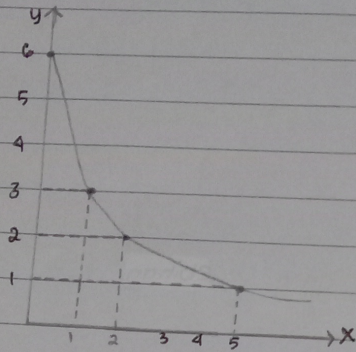
titik bantu : $x=0 \rightarrow y = \frac{6}{0+1} = 6$ (0,6)

$x=1 \rightarrow y = \frac{6}{1+1} = 3$ (1,3)

$x=2 \rightarrow y = \frac{6}{2+1} = 2$ (2,2)

$x=5 \rightarrow y = \frac{6}{5+1} = 1$ (5,1)

Grafik



79. $(x-3)(y+6) = 90$

$x = h = 3$

$y = k = -6$

titik Pusat (3, -6)

titik bantu $x=0 \rightarrow (0-3)(y+6) = 90$

$-3y - 18 = 90$

$-3y = 108$

$y = -36$ (0, -36)

$y=0 \rightarrow (x-3)(0+6) = 90$

$6x - 18 = 90$

$6x = 108$

$x = 18$ (18, 0)

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$$40. x = 96 - 4y - 2y^2$$

a. Arah Parabola

$$a < 0 \quad \text{>}$$

b. Diskriminan

$$\begin{aligned} D &= b^2 - 4ac \\ &= (-4)^2 - 4(-2)(96) \\ &= 16 + 768 = 784 \end{aligned}$$

$D > 0$ terbuka ke kiri dan memotong sumbu y di dua titik

c. Titik Puncak

$$\begin{aligned} \left[\frac{-D}{4a}, \frac{-b}{2a} \right] &= \left[\frac{-784}{4(-2)}, \frac{4}{2(-2)} \right] \\ &= (98, -1) \end{aligned}$$

$$d. Y_{1,2} = \frac{4 \pm \sqrt{784}}{2(-2)}$$

$$Y_1 = \frac{4 + 28}{-4} = -8$$

$$Y_2 = \frac{4 - 28}{-4} = 6$$

$$x = 96 - 4y - 2y^2$$

$$y = 0 \rightarrow x = 96 \quad (96, 0)$$

$$x = -2 \rightarrow x = 96 - 4(-2) - 2(-2)^2 = 96 \quad (96, -2)$$

$$x = 6 \rightarrow x = 96 - 4(6) - 2(6)^2 = 0 \quad (0, 6)$$

$$y = -8 \rightarrow x = 96 - 4(-8) - 2(-8)^2 = 0 \quad (0, -8)$$

