

Nama : _____

Kelas : _____

Contoh :

Gambarlah grafik fungsi kuadrat $y = x^2 + 2x - 15$!

Jawab :

1. Titik potong sumbu y, jika $x = 0$

$$y = x^2 + 2x - 15$$

$$x = 0 \rightarrow y = (0)^2 + 2(0) - 15$$

$$y = -15 \quad (0, -15)$$

Titik potong sumbu x, jika $y = 0$

$$y = x^2 + 2x - 15$$

$$y = 0 \rightarrow 0 = x^2 + 2x - 15$$

$$0 = (x - 3)(x + 5)$$

$$x - 3 = 0 \quad x + 5 = 0$$

$$x = 3 \quad x = -5$$

$$(3,0) \quad (-5,0)$$

$$y = x^2 + 2x - 15$$

$$a = 1 \quad b = 2 \quad c = -15$$

$a > 0$ (grafik terbuka ke atas, memiliki nilai minimum)

$$D = b^2 - 4ac$$

$$= (2)^2 - 4(1)(-15)$$

$$= 4 + 60$$

$$= 64 > 0 \quad (\text{memotong sumbu x di 2 titik})$$

2. Persamaan sumbu simetri

$$x = \frac{-b}{2a} = \frac{-(2)}{2(1)} = -1$$

3. Titik puncak (Nilai minimum karena $a > 0$)

$$y = \frac{-D}{4a} = \frac{-(64)}{4(1)} = -16$$

4. koordinat titik puncak (-1,-16)

x	-5	-1	0	3
y	0	-16	-15	0

5. Titik bantu

x	-6	-5	-4	-3	-2	-1	0	1	2	3	4
y	9	0	-7	-12	-15	-16	-15	-12	-7	0	9

Grafik Fungsi Kuadrat

x	-6	-5	-4	-3	-2	-1	0	1	2	3
x²	36	25	16	9	4	1	0	1	4	9
2x	-12	-10	-8	-6	-4	-2	0	2	4	6
-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15
y	9	0	-7	-12	-15	-16	-15	-12	-7	0
(x, y)	(-6,9)	(-5,0)	(-4,-7)	(-3,-12)	(-2,-15)	(-1,-16)	(0,-15)	(1,-12)	(2,-7)	(3,0)

