

## PEMBAHASAN SELEKSI NASIONAL MASUK PERGURUAN TINGGI NEGERI (SNMPTN)

Mata Pelajaran : Matematika Dasar  
 Tanggal : 12 Juni 2012  
 Kode Soal : 823

1. **Jawab: D**

**Eksponen**

$$a^b = 2^{20} - 2^{19}$$

$$a^b = 2^{19}(2 - 1)$$

$$a^b = 2^{19}$$

$$a = 2$$

$$b = 19$$

$$a + b = 21$$

Titik A:  $x = 2$

$$6 + 2y = 24$$

$$y = 9$$

$$(2, 9) \rightarrow f = 38$$

Titik B :  $y = 3$

$$3x + 6 = 24$$

$$x = 6$$

$$(6, 3) \rightarrow f = 18$$

$$f_{\min} = 18$$

2. **Jawab: D**

**Persamaan linear**

$$y + 4z = 4$$

$$x + z = 2$$

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

$$2x + y = 4$$

$$x + 2y + 3z = 8$$

5. **Jawab: C**

**Fungsi**

$$f^{-1}(g(0)) = 1$$

$$g(0) = f(1) = 2$$

$$b = g(0) = 2$$

$$g(2) = 6 + 2 = 8$$

3. **Jawab: D**

**Persamaan kuadrat**

$$x_1 + x_2 = 4$$

$$p + 1 + p - 1 = 4$$

$$2p = 4$$

$$p = 2$$

akar-akarnya

$$x_1 = p + 1 = 3$$

$$x_2 = p - 1 = 1$$

$$x_1 \cdot x_2 = 3 \cdot 1 = 3$$

$$a = 3$$

6. **Jawab: A**

**Fungsi kuadrat**

$$y + 1 = a(x + 2)^2$$

$$(0, -5) \rightarrow -4 = a \cdot 4$$

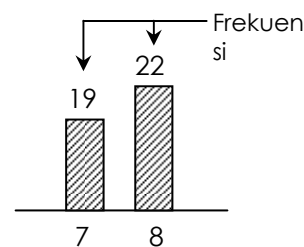
$$a = -1$$

$$f(x) = -(x + 2)^2 - 1$$

$$f(2) = -16 - 1 = -17$$

7. **Jawab: A**

**Statistika**



$$\text{Nilai } 8 = 22 - 19 = 3$$

$$n = \text{total siswa} = 25$$

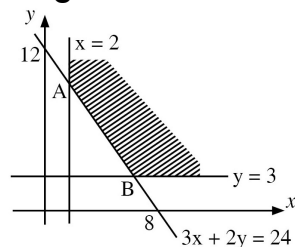
Presentase nilai 8

$$= \frac{3}{25} \times 100\%$$

$$= 12\%$$

4. **Jawab: D**

**Program linear**



8. **Jawab: B****Matriks**

$$\begin{aligned}\det(AB) &= 12 \\ \det(A) \cdot \det(B) &= 12 \\ 2x \cdot (-2) &= 12 \\ x &= -3\end{aligned}$$

9. **Jawab: E****Barisan**

$$a = U_1 = S_1 = 3 \cdot (2^2 - 2) = 6$$

$$S_n = \frac{a}{r-1}(r^n - 1)$$

$$S_n = 3(2^{n+1} - 2)$$

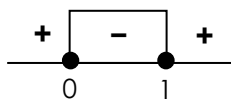
$$S_n = 6(2^n - 1)$$

$$r = 2$$

$$a + r = 6 + 2 = 8$$

10. **Jawab: E****Pertidaksamaan**

$$\begin{aligned}(2x+1)(x-1) &\leq (x-1) \\ (2x+1)(x-1) - (x-1) &\leq 0 \\ (x-1)(2x+1-1) &\leq 0 \\ (x-1)2x &\leq 0\end{aligned}$$



$$0 \leq x \leq 1$$

11. **Jawab: C****Persamaan linear**

|      | jantan | betina | tota |
|------|--------|--------|------|
| puti | 7      | 1      | 2    |
| hita | 8      | 1      | 1    |
| tota | 1      | 2      | 4    |

Jantan dan hitam = 8

12. **Jawab: B****Bidang datar**

|                   |                   |                   |
|-------------------|-------------------|-------------------|
| $L = \frac{1}{5}$ |                   |                   |
| $L = \frac{1}{5}$ |                   |                   |
| $L = \frac{1}{5}$ | $L = \frac{1}{5}$ | $L = \frac{1}{5}$ |
| $\frac{1}{3}$     | $\frac{1}{3}$     | $\frac{1}{3}$     |

$$\frac{1}{3}AB = \frac{1}{5}$$

$$AB = \frac{3}{5}$$

13. **Jawab: C****Statistika**

$$n_1 = 20$$

$$n_2 = 10$$

$$\bar{X}_1 = 65$$

$$\bar{X}_2 = 80$$

$$\bar{X}_A = \bar{X}_{gab}$$

$$\bar{X}_A = \frac{\bar{X}_1 n_1 + \bar{X}_2 n_2}{n_1 + n_2}$$

$$\bar{X}_A = \frac{1300 + 800}{30}$$

$$\bar{X}_A = 70$$

14. **Jawab: A****Logaritma**

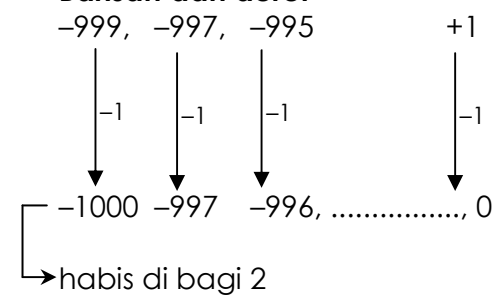
$${}^b\log a + {}^b\log a^2 = 4$$

$${}^b\log a + 2 \cdot {}^b\log a = 4$$

$$3 \cdot {}^b\log a = 4$$

$${}^b\log a = \frac{4}{3}$$

$${}^a\log b = \frac{3}{4}$$

15. **Jawab: B****Barisan dan deret**

$$U_n = 1$$

$$-999 + (n-1) \cdot 2 = 1$$

$$(n-1) \cdot 2 = 1000$$

$$n-1 = 500$$

$$n = 501$$