

PREPARASI ULANGAN



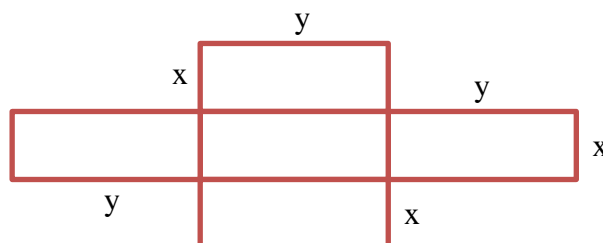
OPERASI BENTUK ALJABAR

Alokasi Waktu : 40 Menit



“Ayo Kita Menalar”

- Tentukan hasil pengurangan :
 - $x^2 - 8y^2 + 11y$ dari $2y^2 + 5y$
 - $4ab^3 - 3a^3b$ oleh $6a^5b - 2ab^3 + 4a^5b$
- Tentukan hasil dari :
 - $(2x - 3)(x + 7)$
 - $(4x^3 + 12x^2 - x - 15) : (x - 1)$
 - $(3p^2 - p - 10) : (p - 2)$
- Sederhanakan bentuk aljabar berikut !
 - $$\frac{x^2 + 4x - 12}{2x^2 + 9x - 18}$$
 - $$\frac{5}{x+3} + \frac{5}{x-3}$$
 - $$\frac{\frac{1}{x+y} - \frac{2}{x-y}}{\frac{3}{x-y} - \frac{4}{x+y}}$$
- Tentukan keliling dan luas daerah berikut jika diketahui $x + y = 12$ dan $x^2 + y^2 = 80$



SELAMAT MENGERJAKAN

JAWABAN

$$1. \text{ a) } (2y^2 + 5y) - (x^2 - 8y^2 + 11y) = 2y^2 + 5y - x^2 + 8y^2 - 11y \\ = 10y^2 - 6y - x^2$$

$$\text{b) } (4ab^3 - 3a^3b) - (6a^5b - 2ab^3 + 4a^5b) = 4ab^3 - 3a^3b - 6a^5b + 2ab^3 - 4a^5b \\ = 6ab^3 - 3a^3b - 10a^5b$$

$$2. \text{ a) } (2x - 3)(x + 7) = 2x^2 - 3x + 14x - 21 \\ = 2x^2 + 11x - 21$$

$$\text{b) } (4x^3 + 12x^2 - x - 15) : (x - 1) = 4x^2 + 16x + 15$$

$$\begin{array}{r} 4x^2 + 16x + 15 \\ x - 1 \overline{) 4x^3 + 12x^2 - x - 15} \\ \underline{4x^3 - 4x^2} \\ 16x^2 - x \\ \underline{16x^2 - 16x} \\ 15x - 15 \\ \underline{15x - 15} \\ 0 \end{array}$$

$$\text{c) } (3p^2 - p - 10) : (p - 2) = 3p + 5$$

$$\begin{array}{r} 3p + 5 \\ p - 2 \overline{) 3p^2 - p - 10} \\ \underline{3p^2 - 6p} \\ 5p - 10 \\ \underline{5p - 10} \\ 0 \end{array}$$

$$3. \text{ a) } \frac{x^2 + 4x - 12}{2x^2 + 9x - 18} = \frac{(x+6)(x-2)}{(2x-3)(x+6)} = \frac{x-2}{2x-3}$$

$$\text{b) } \frac{5}{x+3} + \frac{5}{x-3} = \frac{5(x-3) + 5(x+3)}{(x+3)(x-3)} = \frac{10x}{x^2-9}$$

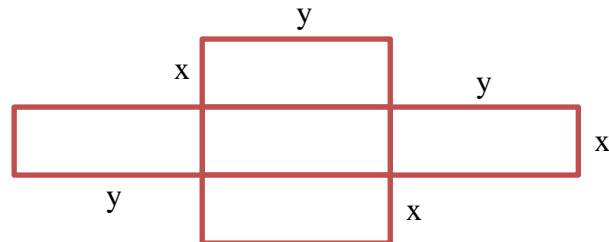
$$\text{c) } \frac{\frac{1}{x+y} - \frac{2}{x-y}}{\frac{3}{x-y} - \frac{4}{x+y}} = \frac{\frac{(x-y) - 2(x+y)}{(x+y)(x-y)}}{\frac{3(x+y) - 4(x-y)}{(x-y)(x+y)}} = \frac{\frac{-x-3y}{x^2-y^2}}{\frac{-x+7y}{x^2-y^2}} = \frac{-x-3y}{7y-x}$$

4. Diketahui : $x + y = 12$

$$x^2 + y^2 = 80$$

Ditanya : Keliling dan Luas bangun

Jawab :



$$\text{Keliling} = 6x + 6y = 6(x + y) = 6 \cdot 12 = 72$$

Menjabarkan rumus jumlah kuadrat dua bilangan untuk mendapatkan nilai xy

$$x^2 + y^2 = (x + y)^2 - 2xy$$

$$\Leftrightarrow 80 = 12^2 - 2xy$$

$$\Leftrightarrow 80 = 144 - 2xy$$

$$\Leftrightarrow 2xy = 144 - 80$$

$$\Leftrightarrow xy = \frac{64}{2}$$

$$\Leftrightarrow xy = 32$$

Luas = 5. Luas Persegi panjang

$$= 5 \cdot xy$$

$$= 5 (32)$$

$$= 160$$