

Nama :

Kelas :

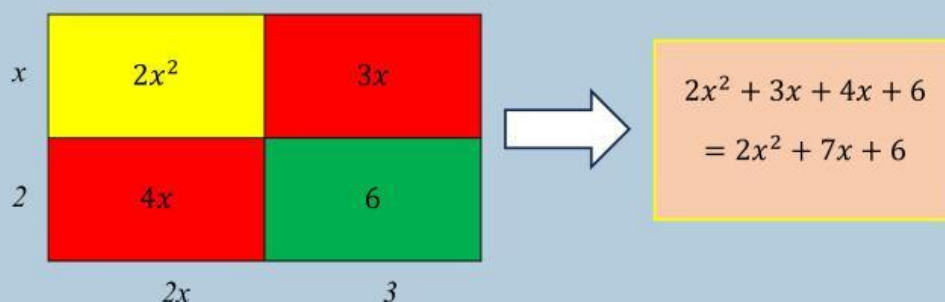
No :

OPERASI PERKALIAN DAN PEMBAGIAN BENTUK ALJABAR

A. OPERASI PERKALIAN 2 SUKU DENGAN 2 SUKU

Perkalian Bentuk Aljabar 2 Suku dengan 2 Suku dapat diilustrasikan seperti gambar berikut ini!

Contoh : $(x + 2)(2x + 3)$



Dari ilustrasi di atas, didapatkan pola untuk perkalian 2 suku dengan 2 suku sebagai berikut:

$$\begin{aligned}
 (x + 2)(2x + 3) &= \dots\dots\dots + \dots\dots\dots + \dots\dots\dots + \dots\dots\dots \\
 &= \dots\dots\dots x^2 + (\dots\dots\dots x + \dots\dots\dots x) + \dots\dots\dots \\
 &= \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots
 \end{aligned}$$

$$\begin{aligned}
 (2x + 2)(2x - 3) &= \dots\dots\dots - \dots\dots\dots + \dots\dots\dots - \dots\dots\dots \\
 &= \dots\dots\dots x^2 + (\dots\dots\dots x + \dots\dots\dots x) - \dots\dots\dots \\
 &= \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots
 \end{aligned}$$

Sehingga didapatkan pola secara umum untuk perkalian bentuk aljabar 2 suku dengan 2 suku, yaitu

$$\begin{aligned}
 (ax + b)(cx + d) &= \dots\dots\dots x^2 + (\dots\dots\dots) x + \dots\dots\dots \\
 (ax + b)(cx - d) &= \dots\dots\dots x^2 + (\dots\dots\dots) x - \dots\dots\dots \\
 (ax - b)(cx + d) &= \dots\dots\dots x^2 + (\dots\dots\dots) x - \dots\dots\dots \\
 (ax - b)(cx - d) &= \dots\dots\dots x^2 + (\dots\dots\dots) x + \dots\dots\dots
 \end{aligned}$$

LATIHAN SOAL 1

Isilah titik – titik dibawah dengan bilangan bulat yang tepat !

1. $(3a - 5b)(2a + 7b) = \dots\dots\dots a^2 + \dots\dots\dots ab + \dots\dots\dots b^2$

2. $(x - 5)(-3x - 3) = \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots$

3. $(-7x + 1)(-6x - 7) = \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots$

4. $(3x + 1)(-2x - 6) = \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots$

5. $(2x + 5)^2 = \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots$

6. $(2x - 5)^2 = \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots$

7. $(2x + 5)(2x - 5) = \dots\dots\dots x^2 + \dots\dots\dots x + \dots\dots\dots$

B. OPERASI PEMBAGIAN BENTUK ALJABAR

Sebelum membahas operasi perkalian aljabar, kita perlu mengingat kembali sifat – sifat bilangan berpangkat. Mari kita sederhanakan bulangan berpangkat berikut!

$$a^2 : a = a^{2-1} = a^1 = a$$

$$a^2 : a^2 = a^{2-2} = a^0 = 1$$

$$4a^3 : 2a^2 = (4:2) \times a^{3-2} = 2a^1 = 2a$$

$$6a^3b : 3b^3 = (6:3) \times (a^3) \times (b^{1-3}) = 2a^3b^{-2} = \frac{2a^3}{b^2}$$

LATIHAN SOAL 2

Sederhanakanlah bentuk di bawah ini dengan mengisi titik – titik dibawah!

1. $\frac{25a^3b}{3a^2b} = \frac{\dots\dots\dots}{\dots\dots\dots}$

4. $\frac{25a^2b^3}{5a^2b^2} \times a^3b^5 = \frac{\dots\dots\dots}{\dots\dots\dots}$

2. $\frac{45a^5b^3}{3a^2b^2} = \frac{\dots\dots\dots}{\dots\dots\dots}$

5. $\frac{54a^4b^5}{9a^7b^8} \times \frac{a^3b^2}{ab} = \frac{\dots\dots\dots}{\dots\dots\dots}$

3. $\frac{-36a^5b^3}{4a^4b^3} = \frac{\dots\dots\dots}{\dots\dots\dots}$