***PONAVLJANJE***

*Rastavi na faktore i pojednostavi sljedeće razlomke :*


**1.** $\dfrac{2x^2y-6xy^2}{3x^3-9x^2y}$ **RJ:** $\dfrac{2y}{3x}$ **2.** $\dfrac{2x^4-2x^2y^2}{6x^2+6xy}$ **RJ:** $\dfrac{x(x-y)}{3}$

**3.** $\dfrac{a^2-b^2+(a+b)^2}{a^3+2a^2b+ab^2}$ **4.** $\dfrac{(2x-3)^2+24x}{4x^2-9}$

**5.** $\left(\dfrac{a^{-2}-b^{-2}}{a^{-1}-b^{-1}}\right)^{-2}\cdot\left(a^2+2ab+b^2\right)$ **RJ:** $a^2b^2$

**6.** $\dfrac{x^2-2x+15}{x^2+8x+15}:\left(x^2-25\right)$ **RJ:** $\dfrac{1}{(x+5)^2}$

**7.** $\dfrac{9x^2-y^2}{6x^2+xy-y^2}:\dfrac{3xy+y^2}{2x^2+xy}$ **RJ:** $\dfrac{x}{y}$

**8.** $\left(\dfrac{1}{x^2+y^2+2xy}+\dfrac{1}{x^2-y^2}\right)\cdot\left(\dfrac{1}{2}x^2+\dfrac{1}{2}y^3x^{-1}\right)$ **RJ:** $\dfrac{x^2-xy+y^2}{(x+y)(x-y)}$

**9.** $\dfrac{3x}{x-1}+\dfrac{2x+1}{x^2-1}+\dfrac{3x^2+5x-1}{1-x^2}$ **RJ:** $\dfrac{2}{(x-1)(x+1)}$

**10.** $\dfrac{4b^2-a^2}{2b^2+6b-ab-3a}:\left(b+\dfrac{3b-6}{b-2}\right)^{-1}$ **RJ:** $2b+a$

**11.** $\dfrac{a^3-6a^2+12a-8}{a^3+8}:\dfrac{a^2-4a+4}{6+3a}$ **RJ:** $\dfrac{3(a-2)}{a^2-2a+4}$

**12.** $\left(\dfrac{4x+12}{x^2-3x}+\dfrac{x}{9-x^2}\right):\dfrac{x+6}{x+3}-\dfrac{5}{x-3}$ **RJ:** $-\dfrac{2}{x}$

**13.** $\dfrac{1}{9x^2+3x+1}+\dfrac{9x^2}{27x^3-1}\cdot\left(\dfrac{3x}{9x^2-1}\right)^{-1}$ **RJ:** $1$

**14.** $\left(\dfrac{1}{x^2-x-2}-\dfrac{1}{x^2+3x+2}\right)\cdot\left(x^2-4\right)$ **RJ:** $\dfrac{4}{x+1}$

**15.** $\dfrac{a^4-a^2+2a-1}{(a^2+a-1)(a-2)}\cdot\left[\dfrac{a^4-2a^3+a-2}{1-\dfrac{4}{a}+\dfrac{4}{a^2}}\right]^{-1}$ **RJ:** $\dfrac{1}{a^2(a+1)}$

**16.** $\left(\frac{9+4a^2}{2a}+3\right)\left(\frac{1}{2a}+\frac{1}{3}\right)^{-1}:\frac{27-8a^3}{9-4a^2}$ **RJ:** 3

**17.** $\frac{x+12}{x+3}+\frac{x^2-3x}{6-x}\left(\frac{x}{x^2-9}-\frac{12}{x^2+3x}\right)$ **RJ:** $\frac{18}{x+3}$

**18.** $\frac{x^2-3x-10}{x^4-(7x+10)^2}$ **RJ:** $\frac{x-5}{(x+5)(x^2-7x-10)}$

**19.** $\frac{1}{a^2+2a+4}+\frac{a^2}{a^3-8}:\frac{4a}{a^2-4}$ **RJ:** $\frac{1}{4}$

**20.** $\frac{a+8}{a+2}+\frac{a^2-2a}{4-a}\left(\frac{a}{a^2-4}-\frac{8}{a^2+2a}\right)$ **RJ:** $\frac{12}{a+2}$

**21.** $\frac{\left(\frac{x}{y}+\frac{y}{x}-1\right)\left(\frac{x}{y}+\frac{y}{x}+1\right)}{\left(\frac{x^4}{y^2}-\frac{y^4}{x^2}\right):\left(x^2-y^2\right)}$ **RJ:** 1

**22.** $\frac{\frac{x+y}{x-y}-\frac{x-y}{x+y}}{\frac{x+y}{x-y}+\frac{x-y}{x+y}}:\frac{x^2y^2}{(x+y)^2+(x-y)^2}$ **RJ:** $\frac{4}{xy}$

**23.** $\frac{a^{-2}-a^{-1}b^{-1}+b^{-2}}{a^{-3}+b^{-3}}:\left(\frac{a+b}{ab}\right)^{-2}$ **RJ:** $ab$

**24.** $\left(a^2b^{-3}+a^{-1}\right):\left(ab^{-2}-b^{-1}+a^{-1}\right):\frac{(a-b)^2+4ab}{1+a^{-1}b}$ **RJ:** $\frac{1}{ab}$

**25.** $\left(\frac{1}{1-a}+\frac{1}{\frac{1}{a}-1}\right):\frac{\frac{a+1}{2}}{\frac{a+1}{2}-1}$ **RJ:** $-1$

**26.** $\left(\frac{1}{1-a}-\frac{1}{a+\frac{a}{a-1}}\right):\left(a^3+1\right)$