

PONAVLJANJE PRED ISPIT ZNANJA – RM 8



Rastavi na faktore i pojednostavi sljedeće razlomke :

$$1. \left(\frac{a^{-2} - b^{-2}}{a^{-1} - b^{-1}} \right)^{-2} \cdot (a^2 + 2ab + b^2) =$$

RJ: a^2b^2

$$2. \frac{x^2 - 2x - 15}{x^2 + 8x + 15} : (x^2 - 25) =$$

RJ: $\frac{1}{(x+5)^2}$

$$3. \left(\frac{1}{x^2 + y^2 + 2xy} + \frac{1}{x^2 - y^2} \right) \cdot \left(\frac{1}{2}x^2 + \frac{1}{2}y^3x^{-1} \right) =$$

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

$$4. \frac{3x}{x-1} + \frac{2x+1}{x^2-1} + \frac{3x^2+5x-1}{1-x^2} =$$

RJ: $\frac{2}{(x-1)(x+1)}$

$$5. \frac{4b^2 - a^2}{2b^2 + 6b - ab - 3a} : \left(b + \frac{3b-6}{b-2} \right)^{-1} =$$

RJ: $2b + a$

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

RJ: $-\frac{2}{x}$

$$7. \frac{a^4 - a^2 + 2a - 1}{(a^2 + a - 1)(a - 2)} \cdot \left[\frac{a^4 - 2a^3 + a - 2}{1 - \frac{4}{a} + \frac{4}{a^2}} \right]^{-1} =$$

RJ: $\frac{1}{a^2(a+1)}$

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

RJ: 3

$$9. \frac{x^2 - 3x - 10}{x^4 - (7x+10)^2} =$$

RJ: $\frac{x-5}{(x+5)(x^2-7x-10)}$

$$10. \frac{1}{a^2+2a+4} + \frac{a^2}{a^3-8} : \frac{4a}{a^2-4} =$$

RJ: $\frac{1}{4}$

$$11. \frac{a+8}{a+2} + \frac{a^2-2a}{4-a} \left(\frac{a}{a^2-4} - \frac{8}{a^2+2a} \right) =$$

RJ: $\frac{12}{a+2}$

$$12. \frac{\left(\frac{x}{y} + \frac{y}{x} - 1 \right) \left(\frac{x}{y} + \frac{y}{x} + 1 \right)}{\left(\frac{x^4}{y^2} - \frac{y^4}{x^2} \right)} : (x^2 - y^2) =$$

RJ: 1

$$13. \frac{\frac{x+y}{x-y} - \frac{x-y}{x+y}}{\frac{x+y}{x-y} + \frac{x-y}{x+y}} : \frac{x^2y^2}{(x+y)^2 + (x-y)^2} =$$

RJ: $\frac{4}{xy}$

$$14. \frac{a^{-2} - a^{-1}b^{-1} + b^{-2}}{a^{-3} + b^{-3}} : \left(\frac{a+b}{ab} \right)^{-2} =$$

RJ: ab

$$15. (a^2b^{-3} + a^{-1}) : (ab^{-2} - b^{-1} + a^{-1}) : \frac{(a-b)^2 + 4ab}{1 + a^{-1}b} =$$

RJ: $\frac{1}{ab}$