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VERIFICA DI MATEMATICA – RECUPERO DEBITO FORMATIVO

CLASSE 5^B – 14 Gennaio 2008

COGNOME _____ NOME _____

1. $\dfrac{x^2 - x - 2}{x^2 + 2x - 8} \cdot \dfrac{x^2 + 5x}{x + 1} \cdot \dfrac{x^2 - x - 20}{x^2 - 25}$ _____/3

2. $\dfrac{x^2 + 3x}{4xy - 16y} : \dfrac{x + 3}{3x - 12}$ _____/2,5

3. $\dfrac{12x}{x^2 - 9} + \dfrac{x - 3}{x + 3}$ _____/3

4. $\dfrac{2y^2 + x^2}{x^2 - y^2} - \dfrac{y}{x - y} - \dfrac{y^2}{x^2 - y^2}$ _____/3,5

5. $\left(\dfrac{1}{1 + x} - \dfrac{2x}{x^2 - 1}\right) \cdot \left(1 - \dfrac{1}{x}\right) \cdot \left(1 - \dfrac{1}{x + 1}\right)$ _____/3,5

Totale punti 15,5. Sufficienza con punti 8,5.

BUON LAVORO!!!

1. $\dfrac{x^2-x-2}{x^2+2x-8}\cdot\dfrac{x^2+5x}{x+1}\cdot\dfrac{x^2-x-20}{x^2-25}=$

$=\dfrac{(x-2)(x+1)}{(x+4)(x-2)}\cdot\dfrac{x(x+5)}{x+1}\cdot\dfrac{(x-5)(x+4)}{(x-5)(x+5)}=\boxed{x}$

2. $\dfrac{x^2+3x}{4xy-16y}:\dfrac{x+3}{3x-12}=\dfrac{x(x+3)}{4y(x-4)}\cdot\dfrac{3(x-4)}{x+3}=\boxed{\dfrac{3x}{4y}}$

3. $\dfrac{12x}{x^2-9}+\dfrac{x-3}{x+3}=\dfrac{12x}{(x-3)(x+3)}+\dfrac{x-3}{x+3}=$

$=\dfrac{12x+(x-3)(x-3)}{(x-3)(x+3)}=\dfrac{12x+x^2-6x+9}{(x-3)(x+3)}=\dfrac{x^2+6x+9}{(x-3)(x+3)}=$

$=\dfrac{(x+3)^2}{(x-3)(x+3)}=\boxed{\dfrac{x+3}{x-3}}$

4. $\dfrac{2y^2+x^2}{x^2-y^2}-\dfrac{y}{x-y}-\dfrac{y^2}{x^2-y^2}=$

$=\dfrac{2y^2+x^2}{(x-y)(x+y)}-\dfrac{y}{x-y}-\dfrac{y^2}{(x-y)(x+y)}=$

$=\dfrac{2y^2+x^2-y(x+y)-y^2}{(x-y)(x+y)}=\dfrac{2y^2+x^2-xy-y^2-y^2}{(x-y)(x+y)}=$

$=\dfrac{x^2-xy}{(x-y)(x+y)}=\dfrac{x(x-y)}{(x-y)(x+y)}=\boxed{\dfrac{x}{x+y}}$

5. $\left(\dfrac{1}{1+x}-\dfrac{2x}{x^2-1}\right)\cdot\left(1-\dfrac{1}{x}\right)\cdot\left(1-\dfrac{1}{x+1}\right)=$

$=\left(\dfrac{1}{1+x}-\dfrac{2x}{(x-1)(x+1)}\right)\cdot\left(\dfrac{x-1}{x}\right)\cdot\left(\dfrac{x+1-1}{x+1}\right)=$

$=\dfrac{x-1-2x}{(x-1)(x+1)}\cdot\dfrac{x-1}{x}\cdot\dfrac{x}{x+1}=$

$=\dfrac{-x-1}{(x-1)(x+1)}\cdot\dfrac{x-1}{x}\cdot\dfrac{x}{x+1}=$

$=\dfrac{-(x+1)}{(x-1)(x+1)}\cdot\dfrac{x-1}{x}\cdot\dfrac{x}{x+1}=\boxed{-\dfrac{1}{x+1}}$