ESPRESSIONI CON I POLINOMI

SOMMA ALGEBRICA DI POLINOMI

1. $\left(\frac{1}{5}a^3-\frac{5}{2}a^2+a+1\right)-\left(2a^3-\frac{8}{3}a^2+\frac{1}{4}a+1\right)=$

$=\frac{1}{5}a^3-\frac{5}{2}a^2+a+1-2a^3+\frac{8}{3}a^2-\frac{1}{4}a-1=-\frac{9}{5}a^3+\frac{1}{6}a^2+\frac{3}{4}a$

2. $\left(-\frac{1}{5}x^3+7x^2+9\right)-\left(\frac{3}{4}x^3+5x^2-7x+4\right)=$

$=-\frac{1}{5}x^3+7x^2+9-\frac{3}{4}x^3-5x^2+7x-4=-\frac{19}{20}x^3+2x^2+7x+5$

3. $(-3a^2b^3+7a^2-b^2)-(+8a^2-4a^2b^3+b^2)=a^2b^3-a^2-2b^2$

4. $\left(a^2+\frac{1}{3}a\right)-\left[5a+\frac{3}{2}a^3-(-4a^2+a-a^3)+\frac{1}{2}a\right]-\frac{2}{3}a^3=$

$=a^2+\frac{1}{3}a-\left[5a+\frac{3}{2}a^3+4a^2-a+a^3+\frac{1}{2}a\right]-\frac{2}{3}a^3=$

$=a^2+\frac{1}{3}a-5a-\frac{3}{2}a^3-4a^2+a-a^3-\frac{1}{2}a-\frac{2}{3}a^3=-\frac{19}{6}a^3-3a^2-\frac{25}{6}a$

5. $-\left(\frac{1}{16}a^4-2a^2+a-3\right)+\left[\left(-\frac{1}{4}a^2\right)^2-(2a+1)-(-a)^2\right]+(-1)^2=$

$=-\frac{1}{16}a^4+2a^2-a+3+\left[\frac{1}{16}a^4-2a-1-a^2\right]+1=$

$=-\frac{1}{16}a^4+2a^2-a+3+\frac{1}{16}a^4-2a-1-a^2+1=a^2-3a+3$

PRODOTTO DI UN POLINOMIO PER UN MONOMIO

6. $-4ab\,(2a^2+3ab-b^2)=-8a^3b-12a^2b^2+4ab^3$

7. $-4a^2b^3\,(a+2a^2b-3a^3)=-4a^3b^3-8a^4b^4+12a^5b^3$

8. $(a^2+a+1)\,2a^3=2a^5+2a^4+2a^3$

9. $(4x^2-5x)\,(-2x^2)=-8x^4+10x^3$

10. $-\frac{5}{4}\,x\,(12x^3-8) = -15x^4+10x$

11. $\left(\frac{1}{4}\,a^3-5a+\frac{3}{4}\right)(-8a^2) = -2a^5+40a^3-6a^2$

Esegui le seguenti operazioni scrivendo il risultato sotto forma di polinomio:

12. $\frac{x-2}{5}+\frac{3x-1}{4} = \frac{1}{5}x-\frac{2}{5}+\frac{3}{4}x-\frac{1}{4} = \frac{19}{20}x-\frac{13}{20}$

13. $\frac{5x-3}{10}+\frac{4x}{15}-\frac{3-2x}{2} = \frac{1}{2}x-\frac{3}{10}+\frac{4}{15}x-\frac{3}{2}+x = \frac{53}{30}x-\frac{9}{5}$

14. $\frac{3x-4}{2}-\frac{x+3}{4}+\frac{1}{8}x = \frac{3}{2}x-2-\frac{1}{4}x-\frac{3}{4}+\frac{1}{8}x = \frac{11}{8}x-\frac{11}{4}$

15. $\frac{3x^2+x}{6}-\frac{2x-x^2+3}{4} = \frac{1}{2}x^2+\frac{1}{6}x-\frac{1}{2}x+\frac{1}{4}x^2-\frac{3}{4} = \frac{3}{4}x^2-\frac{1}{3}x-\frac{3}{4}$

16. $\frac{3a^2-ab}{4}+2a\left(\frac{3}{4}a-\frac{b}{6}\right) = \frac{3}{4}a^2-\frac{1}{4}ab+\frac{3}{2}a^2-\frac{1}{3}ab = \frac{9}{4}a^2-\frac{7}{12}ab$

DIVISIONE DI UN POLINOMIO PER UN MONOMIO

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

18. $(12a^2-9a^3-6a^4-12a^5):(-3a) = -4a+3a^2+2a^3+4a^4$

19. $(12a^3b^2+8a^2b^3-16a^2bc+24a^2b^2c^2):(-4a^2b) = -3ab-2b^2+4c-6bc^2$

20. $\left(\frac{1}{3}x^4-5a^3x^5+2ax^3-\frac{4}{3}a^2x^4\right):\left(-\frac{1}{3}x^3\right) = -x+15a^3x^2-6a+4a^2x$

21. $\left(a^3b-\frac{1}{3}a^2b^2+\frac{1}{9}ab^3\right):\left(-\frac{1}{3}ab\right) = -3a^2+ab-\frac{1}{3}b^2$

22. $\left(2{,}8\,a^4b^4-2{,}4\,a^3b^2+\frac{6}{5}a^2b^2+ab^2\right):(-0{,}2\,ab^2) = -14a^3b^2+12\,a^2-6\,a-5$

23. $(3x^2-x):(2x)+\frac{x-1}{3} = \frac{3}{2}x-\frac{1}{2}+\frac{1}{3}x-\frac{1}{3} = \frac{11}{6}x-\frac{5}{6}$

24. $\frac{a-2b}{4}+(a^2+6ab):a = \frac{1}{4}a-\frac{1}{2}b+a+6b = \frac{5}{4}a+\frac{11}{2}b$

25. $\left(\frac{1}{4}x^2-\frac{2}{3}x\right):\left(+\frac{1}{2}x\right)-\frac{x-2}{16} = \frac{1}{2}x-\frac{4}{3}-\frac{1}{16}x+\frac{1}{8} = \frac{7}{16}x-\frac{29}{24}$