תרגול אינטגרל של פולינום

תזכורת - הנוסחה הכללית לאינטגרל של פולינום היא:

$$\int ax^n\,dx = \frac{a}{n+1}x^{n+1} + C$$

1. $\int (3x^2 + 5x + 2)\,dx$
2. $\int (2x^3 - 4x^2 + 7x - 1)\,dx$
3. $\int (x^4 + 2x^3 - 5x^2 + 3x - 6)\,dx$
4. $\int (4x^3 + 6x^2 - 8x + 1)\,dx$
5. $\int (2x^2 - 3x + 5)\,dx$
6. $\int (x^3 + x^2 + x + 1)\,dx$
7. $\int (5x^4 - 2x^3 + 8x^2 - 4x + 7)\,dx$
8. $\int (3x^2 - 2x + 6)\,dx$
9. $\int (4x^5 + 3x^4 - 2x^3 + x^2 + 5x - 7)\,dx$
10. $\int (x^2 + 4)\,dx$

פתרונות

1. $\int (3x^2+5x+2)\,dx = \int 3x^2+5x+2\,dx = x^3+\frac{5}{2}x^2+2x+C$

2. $\int (2x^3-4x^2+7x-1)\,dx = \int 2x^3-4x^2+7x-1\,dx = \frac{1}{2}x^4-\frac{4}{3}x^3+\frac{7}{2}x^2-x+C$

3. $\int (x^4+2x^3-5x^2+3x-6)\,dx = \int x^4+2x^3-5x^2+3x-6\,dx = \frac{1}{5}x^5+\frac{1}{2}x^4-\frac{5}{3}x^3+\frac{3}{2}x^2-6x+C$

4. $\int (4x^3+6x^2-8x+1)\,dx = \int 4x^3+6x^2-8x+1\,dx = x^4+2x^3-4x^2+x+C$

5. $\int (2x^2-3x+5)\,dx = \int 2x^2-3x+5\,dx = \frac{2}{3}x^3-\frac{3}{2}x^2+5x+C$

6. $\int (x^3+x^2+x+1)\,dx = \int x^3+x^2+x+1\,dx = \frac{1}{4}x^4+\frac{1}{3}x^3+\frac{1}{2}x^2+x+C$

7. $\int (5x^4 - 2x^3 + 8x^2 - 4x + 7)\,dx = \int 5x^4 - 2x^3 + 8x^2 - 4x + 7\,dx = x^5 - \frac{1}{2}x^4 + \frac{8}{3}x^3 - 2x^2 + 7x + C$

8. $\int (3x^2 - 2x + 6)\,dx = \int 3x^2 - 2x + 6\,dx = x^3 - x^2 + 6x + C$

9. $\int (4x^5 + 3x^4 - 2x^3 + x^2 + 5x - 7)\,dx = \int 4x^5 + 3x^4 - 2x^3 + x^2 + 5x - 7\,dx = \frac{4}{6}x^6 + \frac{3}{5}x^5 - \frac{1}{2}x^4 + \frac{1}{3}x^3 + \frac{5}{2}x^2 - 7x + C$

10. $\int (x^2 + 4)\,dx = \int x^2 + 4\,dx = \frac{1}{3}x^3 + 4x + C$