

Vypočítajte nasledovné integrály (A, B, D sú konštanty):

1. $\int (1 + 3t) dt = (t + \frac{3}{2}t^2 + C)$
2. $\int (2x + \frac{1}{3}x^2 - x^3) dx = (x^2 + \frac{1}{9}x^3 - \frac{1}{4}x^4 + C)$
3. $\int (At + Bt^2) dt = (A\frac{t^2}{2} + B\frac{1}{3}t^3 + C)$
4. $\int (1 + 6y + 5y^2) dy = (y + \frac{6}{2}y^2 + \frac{5}{3}y^3 + C)$
5. $\int (Ax + 2x^2 + \frac{1}{3}D) dx = (A\frac{1}{2}x^2 + \frac{2}{3}x^3 + \frac{1}{3}Dx + C)$
6. $\int (x - 3) dx = (\frac{x^2}{2} - 3x + C)$
7. $\int (By^2 + Dy^3) dy = (B\frac{y^3}{3} + D\frac{1}{4}y^4 + C)$
8. $\int (t^2 + 2t - 8) dt = (\frac{t^3}{3} + t^2 - 8t + C)$
9. $\int (y - 3) dy = (\frac{y^2}{2} - 3y + C)$
10. $\int (-x^5 - \frac{1}{4}x^3 - 8) dx = (-\frac{x^6}{6} - \frac{1}{16}x^4 - 8x + C)$
11. $\int (3 + 4t) dt = (3t + \frac{4}{2}t^2 + C)$
12. $\int (-8y + 3y^2 + 5y^4) dy = (-\frac{8y^2}{2} + \frac{3}{3}y^3 + \frac{5}{5}y^5 + C)$

Vypočítajte nasledovné integrály v príslušných hraniciach (A, B, D sú konštanty):

$$13. \int_0^2 x^2 dx = \left[\frac{x^3}{3} \right]_0^2 = \frac{8}{3}$$

$$14. \int_1^2 (t-3) dt = \left[\frac{t^2}{2} - 3t \right]_1^2 = -\frac{3}{2}$$

$$15. \int_1^2 (At + B) dt = \left[A \frac{t^2}{2} + Bt \right]_1^2 = \frac{3}{2}A + B$$

$$16. \int_0^1 (Cx^2 + Dx + E) dx = \left[\frac{Cx^3}{3} + D \frac{1}{2}x^2 + Ex \right]_0^1 = C \frac{1}{3} + D \frac{1}{2} + E$$

$$17. \int_1^3 (2y + 3y^2 - 3) dy = \left[2 \frac{y^2}{2} + 3 \frac{1}{3}y^3 - 3y \right]_1^3 = 28$$