3.5. Вычислить определенный интеграл $F = \int_{X_0}^{X_1} y\,dx$, методами прямоугольников, трапеций, Симпсона с шагами h_1, h_2. Оценить погрешность вычислений, используя Метод Рунге-Ромберга:

1. $y = \dfrac{x}{2x+5}$, $X_0 = -1,\quad X_k = 1,\quad h_1 = 0.5,\quad h_2 = 0.25$;
2. $y = \dfrac{x}{(3x+4)^2}$, $X_0 = 0,\quad X_k = 4,\quad h_1 = 1.0,\quad h_2 = 0.5$;
3. $y = \dfrac{x}{(3x+4)^3}$, $X_0 = -1,\quad X_k = 1,\quad h_1 = 0.5,\quad h_2 = 0.25$;
4. $y = \dfrac{3x+4}{2x+7}$, $X_0 = -2,\quad X_k = 2,\quad h_1 = 1.0,\quad h_2 = 0.5$;
5. $y = \dfrac{1}{(2x+7)(3x+4)}$, $X_0 = -1,\quad X_k = 1,\quad h_1 = 0.5,\quad h_2 = 0.25$;
6. $y = \dfrac{x}{(2x+7)(3x+4)}$, $X_0 = -1,\quad X_k = 1,\quad h_1 = 0.5,\quad h_2 = 0.25$;
7. $y = \dfrac{1}{3x^2+4x+2}$, $X_0 = -2,\quad X_k = 2,\quad h_1 = 1.0,\quad h_2 = 0.5$;
8. $y = \dfrac{1}{x^2+4}$, $X_0 = -2,\quad X_k = 2,\quad h_1 = 1.0,\quad h_2 = 0.5$;
9. $y = \dfrac{x}{x^2+9}$, $X_0 = 0,\quad X_k = 2,\quad h_1 = 0.5,\quad h_2 = 0.25$;
10. $y = \dfrac{x^2}{x^2+16}$, $X_0 = 0,\quad X_k = 2,\quad h_1 = 0.5,\quad h_2 = 0.25$;
11. $y = \dfrac{1}{x^3+64}$, $X_0 = -2,\quad X_k = 2,\quad h_1 = 1.0,\quad h_2 = 0.5$;
12 $y = \dfrac{x}{x^3+8}$, $X_0 = -1,\quad X_k = 1,\quad h_1 = 0.5,\quad h_2 = 0.25$;
13. $y = \dfrac{x^2}{x^3-27}$, $X_0 = -2,\quad X_k = 2,\quad h_1 = 1.0,\quad h_2 = 0.5$;
14. $y = \dfrac{1}{x^4+16}$, $X_0 = 0,\quad X_k = 2,\quad h_1 = 0.5,\quad h_2 = 0.25$;
15. $y = \dfrac{x}{x^4+81}$, $X_0 = 0,\quad X_k = 2,\quad h_1 = 0.5,\quad h_2 = 0.25$;
16. $y = \dfrac{x^2}{x^4+256}$, $X_0 = 0,\quad X_k = 2,\quad h_1 = 0.5,\quad h_2 = 0.25$;
17. $y = \dfrac{1}{256-x^4}$, $X_0 = -2,\quad X_k = 2,\quad h_1 = 1.0,\quad h_2 = 0.5$;

18. $y = \dfrac{x}{16 - x^4}$, $X_0 = -1, \quad X_k = 1, \quad h_1 = 0.5, \quad h_2 = 0.25$;

19 $y = \dfrac{x^2}{625 - x^4}$, $X_0 = 0, \quad X_k = 4, \quad h_1 = 1.0, \quad h_2 = 0.5$;

20. $y = \dfrac{\sqrt{x}}{4 + 3x}$, $X_0 = 1, \quad X_k = 5, \quad h_1 = 1.0, \quad h_2 = 0.5$;

21. $y = \dfrac{\sqrt{x}}{(1 + 2x)^2}$, $X_0 = 1, \quad X_k = 5, \quad h_1 = 1.0, \quad h_2 = 0.5$;

22. $y = x\sqrt{2x + 3}$, $X_0 = -1, \quad X_k = 1, \quad h_1 = 0.5, \quad h_2 = 0.25$;

23. $y = \dfrac{1}{\sqrt{(2x + 7)(3x + 4)}}$, $X_0 = 0, \quad X_k = 4, \quad h_1 = 1.0, \quad h_2 = 0.5$;

24. $y = \sqrt{16 - x^2}$, $X_0 = -2, \quad X_k = 2, \quad h_1 = 1.0, \quad h_2 = 0.5$;

25. $y = x\sqrt{49 - x^2}$, $X_0 = -2, \quad X_k = 2, \quad h_1 = 1.0, \quad h_2 = 0.5$;

26. $y = x^2\sqrt{36 - x^2}$, $X_0 = 1, \quad X_k = 5, \quad h_1 = 1.0, \quad h_2 = 0.5$;

27. $y = \sqrt{9 + x^2}$, $X_0 = 1, \quad X_k = 5, \quad h_1 = 1.0, \quad h_2 = 0.5$;

28. $y = x^3\sqrt{4 + x^2}$, $X_0 = 1, \quad X_k = 5, \quad h_1 = 1.0, \quad h_2 = 0.5$;

29. $y = \sqrt{x^2 - 36}$, $X_0 = 6.5, \quad X_k = 8.5, \quad h_1 = 0.5, \quad h_2 = 0.25$;

30. $y = x^3\sqrt{x^2 - 49}$, $X_0 = 7.5, \quad X_k = 9.5, \quad h_1 = 0.5, \quad h_2 = 0.25$;