

## NEODREĐENI INTEGRAL. INTEGRALNI RAČUN

### § 1. Najprostiji primeri integracije

U zadacima 1676—1702 primenom osnovne tablice integrala i osnovnih osobina neodređenih integrala naći integrale.

1676.  $\int \sqrt{x} dx.$       1677.  $\int \sqrt[m]{x^m} dx.$       1678.  $\int \frac{dx}{x^2}.$
1679.  $\int 10^x dx.$       1680.  $\int a^x e^x dx.$       1681.  $\int \frac{dx}{2\sqrt{x}}.$
1682.  $\int \frac{dh}{\sqrt{2gh}}.$       1683.  $\int 3,4 x^{-0,17} dx.$       1684.  $\int (1-2u) du.$
1685.  $\int (\sqrt{x}+1)(x-\sqrt{x}+1) dx.$       1686.  $\int \frac{\sqrt{x-x^3}e^x+x^2}{x^3} dx.$
1687.  $\int 2x^{-1,2}+3x^{-0,8}-5x^{0,38} dx.$
1688.  $\int \left(\frac{1-z}{z}\right)^2 dz.$       1689.  $\int \frac{(1-x)^2}{x\sqrt{x}} dx.$
1690.  $\int \frac{(1+\sqrt{x})^3}{\sqrt{x}} dx$       1691.  $\int \frac{\sqrt{x^2-\sqrt{x}}^3}{\sqrt{x}} dx.$
1692.  $\int \frac{dx}{\sqrt{3-3x^2}}.$       1693.  $\int \frac{3 \cdot 2^x - 2 \cdot 3^x}{2^x} dx.$
1694.  $\int \frac{1+\cos^2 x}{1+\cos 2x} dx.$       1695.  $\int \frac{\cos 2x}{\cos^2 x \cdot \sin^2 x} dx.$
1696.  $\int \operatorname{tg}^2 x dx.$       1697.  $\int \operatorname{ctg}^2 x dx.$

1698.  $\int 2 \sin^2 \frac{x}{2} dx.$

1699.  $\int \frac{(1+2x^2) dx}{x^2(1+x^2)}.$

1700.  $\int \frac{(1+x)^2 dx}{x(1+x^2)}.$

1701.  $\int \frac{dx}{\cos 2x + \sin^2 x}.$

1702.  $\int (\arcsin x + \arccos x) dx.$

U zadacima 1703—1780 naći integrale primenom stava o nezavisnosti oblika integralnog obrasca od prirode integracione promenljive.

1703.  $\int \sin x d(\sin x).$

1704.  $\int \operatorname{tg}^3 x d(\operatorname{tg} x).$

1705.  $\int \frac{d(1+x^2)}{\sqrt{1+x^2}}.$

1706.  $\int (x+1)^{15} dx.$

1707.  $\int \frac{dx}{(2x-3)^5}.$

1708.  $\int \frac{dx}{(a+bx)^c} \quad (c \neq 1).$

1709.  $\int \sqrt[5]{(8-3x)^6} dx.$

1710.  $\int \sqrt{8-2x} dx.$

1711.  $\int \frac{m}{\sqrt[3]{(a+bx)^2}} dx.$

1712.  $\int 2x \sqrt{x^2+1} dx.$

1713.  $\int x \sqrt{1-x^2} dx.$

1714.  $\int x^2 \sqrt[5]{x^3+2} dx.$

1715.  $\int \frac{x dx}{\sqrt{x^2+1}}.$

1716.  $\int \frac{x^4 dx}{\sqrt{4+x^5}}.$

1717.  $\int \frac{x^3 dx}{\sqrt{x^4+1}}.$

1718.  $\int \frac{(6x-5) dx}{2\sqrt{3x^2-5x+6}}.$

1719.  $\int \sin^3 x \cos x dx.$

1720.  $\int \frac{\sin x dx}{\cos^2 x}.$

1721.  $\int \frac{\cos x dx}{\sqrt{\sin^2 x}}.$

1722.  $\int \cos^3 x \sin 2x dx.$

1723.  $\int \frac{\sqrt{\ln x}}{x} dx.$

1724.  $\int \frac{(\operatorname{arctg} x)^2 dx}{1+x^2}.$

1725.  $\int \frac{dx}{(\arcsin x)^3 \sqrt{1-x^2}}.$

1726.  $\int \frac{dx}{\cos^2 x \sqrt{1+\operatorname{tg} x}}.$

1727.  $\int \cos 3x d(3x).$

1728.  $\int \frac{d(1+\ln x)}{\cos^2(1+\ln x)}.$

1729.  $\int \cos 3x dx.$

1730.  $\int (\cos \alpha - \cos 2x) dx.$

1731.  $\int \sin (2x-3) dx.$

1732.  $\int \cos (1-2x) dx.$

1733.  $\int \left[ \cos \left( 2x - \frac{\pi}{4} \right) \right]^{-2} dx.$

1734.  $\int e^x (\sin e^x) dx.$

1735.  $\int \frac{d(1+x^2)}{1+x^2}.$

1736.  $\int \frac{d(\arcsin x)}{\arcsin x}$

1737.  $\int \frac{(2x-3) dx}{x^2-3x+8}$

1738.  $\int \frac{dx}{2x-1}.$

1739.  $\int \frac{dx}{cx+m}.$

1740.  $\int \frac{x dx}{x^2+1}.$

1741.  $\int \frac{x^2 dx}{x^3+1}.$

1742.  $\int \frac{e^x dx}{e^x+1}.$

1743.  $\int \frac{e^{2x} dx}{e^{2x}+a^2}.$

1744.  $\int \operatorname{tg} x dx.$

1745.  $\int \operatorname{ctg} x dx.$

1746.  $\int \operatorname{tg} 3x dx.$

1747.  $\int \operatorname{ctg} (2x+1) dx.$

1748.  $\int \frac{\sin 2x}{1+\cos^2 x} dx.$

1749.  $\int \frac{dx}{x \ln x}.$

1750.  $\int \frac{(\ln x)^m}{x} dx.$

1751.  $\int e^{\sin x} d(\sin x).$

1752.  $\int e^{\sin x} \cos x dx.$

1753.  $\int a^{3x} dx.$

1754.  $\int a^{-x} dx.$

1755.  $\int e^{-3x+1} dx.$

1756.  $\int e^{x^2} x dx.$

1757.  $\int e^{-x^3} x^2 dx.$

1758.  $\int \frac{d\left(\frac{x}{3}\right)}{\sqrt{1-\left(\frac{x}{3}\right)^2}}.$

1759.  $\int \frac{dx}{\sqrt{1-25x^2}}.$

1760.  $\int \frac{dx}{1+9x^2}.$

1761.  $\int \frac{dx}{\sqrt{4-x^2}}.$

1762.  $\int \frac{dx}{2x^2+9}.$

1763.  $\int \frac{dx}{\sqrt{4-9x^2}}.$

1764.  $\int \frac{x dx}{x^4+1}.$

1765.  $\int \frac{x dx}{\sqrt{a^2-x^4}}.$

1766.  $\int \frac{x^2 dx}{x^6+4}.$

1767.  $\int \frac{x^3 dx}{\sqrt{1-x^8}}.$

1768.  $\int \frac{e^x dx}{e^{2x}+4}.$

1769.  $\int \frac{2^x dx}{\sqrt{1-4^x}}.$

1770.  $\int \frac{\cos \alpha d\alpha}{\alpha^2+\sin^2 \alpha}.$

1771.  $\int \frac{e^{2x}-1}{e^x} dx.$

1772.  $\int (e^x + 1)^3 dx.$

1773.  $\int \frac{1+x}{\sqrt{1-x^2}} dx.$

1774.  $\int \frac{3x-1}{x^2+9} dx.$

1775.  $\int \sqrt{\frac{1-x}{1+x}} dx.$

1776.  $\int \frac{x(1-x^2)}{1+x^4} dx.$

1777.  $\int \frac{1+x-x^2}{\sqrt{(1-x^2)^3}} dx.$

1778.  $\int \frac{dx}{(x+\sqrt{x^2-1})^2}.$

1779.  $\int \frac{2x-\sqrt{\arcsin x}}{\sqrt{1-x^2}} dx.$

1780.  $\int \frac{x+(\arccos 3x)^2}{\sqrt{1-9x^2}} dx.$

U zadacima 1781—1790 naći integrale izdvojivši prethodno „celi deo“ iz razlomaka pod integralom.

1781.  $\int \frac{x}{x+4} dx.$

1782.  $\int \frac{x}{2x+1} dx.$

1783.  $\int \frac{Ax}{a+bx} dx.$

1784.  $\int \frac{3+x}{3-x} dx.$

1785.  $\int \frac{(2x-1)dx}{x-2}.$

1786.  $\int \frac{x+2}{2x-1} dx.$

1787.  $\int \frac{(1+x)^2}{x^2+1} dx.$

1788.  $\int \frac{x^2-1}{x^2+1} dx.$

1789.  $\int \frac{x}{1-x} dx.$

1790.  $\int \frac{x^4 dx}{x^2+1}.$

1791.  $\int \frac{dx}{x(x-1)}.$

1792.  $\int \frac{dx}{x(x+1)}.$

1793.  $\int \frac{dx}{(x+1)(2x-3)}.$

1794.  $\int \frac{dx}{(a-x)(b-x)}.$

1795.  $\int \frac{x^2+1}{x^2-1} dx.$

1796.  $\int \frac{dx}{x^2-7x+10}.$

1797.  $\int \frac{dx}{x^2+3x-10}.$

1798.  $\int \frac{dx}{4x^2-9}.$

1799.  $\int \frac{dx}{2-3x^2}.$

1800.  $\int \frac{dx}{(x-1)^2+4}.$

1801.  $\int \frac{dx}{x^2-2x+3}.$

1802.  $\int \frac{dx}{x-x^2-2,5}.$

1803.  $\int \frac{dx}{4x^2+4x+5}.$

1804.  $\int \frac{dx}{\sqrt{1-(2x+3)^2}}.$

1805.  $\int \frac{dx}{\sqrt{4x-3-x^2}}.$

1806.  $\int \frac{dx}{\sqrt{8+6x-9x^2}}.$

1807.  $\int \frac{dx}{\sqrt{2-6x-9x^2}}.$

U zadacima 1808—1831 naći integrale transformišući podintegralne zraze primenom trigonometrijskih obrazaca.

1808.  $\int \cos^2 x dx.$       1809.  $\int \sin^2 x dx.$       1810.  $\int \frac{dx}{1 - \cos x}.$
1811.  $\int \frac{dx}{1 + \sin x}.$       1812.  $\int \frac{1 - \cos x}{1 + \cos x} dx.$       1813.  $\int \frac{1 + \sin x}{1 - \sin x} dx.$
1814.  $\int (tg^2 x + tg^4 x) dx.$       1815.  $\int \frac{\cos 2x dx}{1 + \sin x \cos x}.$
1816.  $\int \cos x \sin 3x dx.$       1817.  $\int \cos 2x \cos 3x dx.$
1818.  $\int \sin 2x \sin 5x dx.$       1819.  $\int \cos x \cos 2x \cos 3x dx.$
1820.  $\int \frac{dx}{\cos x}.$       1821.  $\int \frac{1 - \sin x}{\cos x} dx.$       1822.  $\int \frac{\sin^3 x}{\cos x} dx.$
1823.  $\int \frac{\cos^3 x dx}{\sin^4 x}.$       1824.  $\int \frac{\sin^3 \alpha}{\sqrt{\cos \alpha}} d\alpha.$       1825.  $\int \frac{dx}{\cos^4 x}.$
1826.  $\int \cos^3 x dx.$       1827.  $\int tg^4 x dx.$       1828.  $\int \sin^5 x dx.$
1829.  $\int \sin^4 x dx.$       1830.  $\int tg^3 x dx.$       1831.  $\int \frac{dx}{\sin^6 x}.$

## § 2. Osnovni metodi integracije

### Metod parcijalne integracije

U zadacima 1832—1868 naći integrale.

1832.  $\int x \sin 2x dx.$       1833.  $\int x \cos x dx.$       1834.  $\int xe^{-x} dx.$
1835.  $\int x^3 dx.$       1836.  $\int x^n \ln x dx \quad (n \neq -1).$
1837.  $\int x \operatorname{arctg} x dx.$       1838.  $\int \arccos x dx.$       1839.  $\int \operatorname{arctg} \sqrt{x} dx.$
1840.  $\int \frac{\arcsin x}{\sqrt{x+1}} dx.$       1841.  $\int x tg^2 x dx.$       1842.  $\int x \cos^2 x dx.$
1843.  $\int \frac{\lg x}{x^3} dx.$       1844.  $\int \frac{x \operatorname{arctg} x}{\sqrt{1+x^2}} dx.$       1845.  $\int \frac{\arcsin \sqrt{x}}{\sqrt{1-x}} dx.$

1846.  $\int \ln(x^2 + 1) dx.$       1847.  $\int \frac{x^2 dx}{(1+x^2)^2}.$       1848.  $\int \frac{x^3 dx}{\sqrt{1+x^2}}.$
1849.  $\int x^2 \ln(1+x) dx.$       1850.  $\int x^2 e^{-x} dx.$       1851.  $\int x^3 e^x dx.$
1852.  $\int x^2 a^x dx.$       1853.  $\int x^3 \sin x dx.$       1854.  $\int x^2 \cos^2 x dx.$
1855.  $\int \ln^2 x dx.$       1856.  $\int \frac{\ln^3 x}{x^2} dx.$       1857.  $\int \frac{\ln^2 x}{\sqrt{x^5}} dx.$
1858.  $\int (\arcsin x)^2 dx.$       1859.  $\int (\arctg x)^2 x dx.$       1860.  $\int e^x \sin x dx.$
1861.  $\int e^{3x} (\sin 2x - \cos 2x) dx.$       1862.  $\int e^{ax} \cos nx dx.$
1863.  $\int \sin \ln x dx.$       1864.  $\int \cos \ln x dx.$       1865\*.  $\int \frac{x^2 dx}{\sqrt{1-x^2}}.$
- 1866\*.  $\int \sqrt{a^2 + x^2} dx.$       1867.  $\int \frac{x^2 e^x dx}{(x+2)^2}.$       1868.  $\int x^2 e^x \sin x dx.$

### Smena promenljive

U zadacima 1869—1904 naći integrale.

1869.  $\int \frac{dx}{1 + \sqrt{x+1}}$  (smena:  $x+1 = z^2$ ).
1870.  $\int \frac{x^3 dx}{\sqrt{x-1}}.$       1871.  $\int \frac{4x+3}{(x-2)^3} dx.$       1872.  $\int \frac{dx}{x\sqrt{x+1}}.$
1873.  $\int \frac{x+1}{x\sqrt{x-2}} dx.$       1874.  $\int \frac{dx}{1 + \sqrt{x}}.$       1875.  $\int \frac{\sqrt{x}}{x(x+1)} dx.$
1876.  $\int \frac{\sqrt{x}}{x+1} dx.$       1877.  $\int \frac{dx}{1 + \sqrt[4]{x+1}}.$       1878.  $\int \frac{dx}{\sqrt{ax+b+m}}.$
1879.  $\int \frac{\sqrt{x} dx}{\sqrt{x} - \sqrt[4]{x}}$  (smena  $x = z^6$ ).
1880.  $\int \frac{dx}{\sqrt[4]{x}(\sqrt[4]{x}-1)}.$       1881.  $\int \frac{dx}{\sqrt{x} + \sqrt[4]{x}}.$
1882.  $\int \frac{\sqrt{x}}{\sqrt[3]{x^2} - \sqrt[4]{x}} dx.$

$$1883. \int \frac{e^{2x} dx}{\sqrt[4]{e^x + 4}} \quad (\text{smena } e^x + 1 = z^4).$$

$$1884. \int \frac{dx}{\sqrt{1+e^x}}. \quad 1885. \int \frac{\sqrt{1+\ln x}}{x \ln x} dx.$$

$$1886. \int \sqrt{1+\cos^2 x} \cdot \sin 2x \cdot \cos 2x dx.$$

$$1887. \int \frac{\ln \operatorname{tg} x}{\sin x \cdot \cos x} dx. \quad 1888. \int \frac{x^5 dx}{\sqrt{a^3 - x^3}}. \quad 1889. \int \frac{x^5 dx}{(x^2 - 4)^2}.$$

$$1890. \int \frac{dx}{x^2 \sqrt{x^2 + a^2}} \quad \left( \text{smena } x = \frac{1}{z}, \text{ ili } x = a \operatorname{tg} z, \text{ ili } x = a \operatorname{sh} z \right).$$

$$1891. \int \frac{x^2 dx}{\sqrt{a^2 - x^2}} \quad (\text{smena } x = a \sin z).$$

$$1892. \int \frac{dx}{x \sqrt{x^2 - a^2}} \quad \left( \text{smena } x = \frac{1}{z}, \text{ ili } x = \frac{a}{\cos z}, \text{ ili } x = a \operatorname{ch} z \right).$$

$$1893. \int \frac{\sqrt{1+x^2}}{x^4} dx. \quad 1894. \int \frac{\sqrt{1-x^2}}{x^2} dx. \quad 1895. \int \frac{dx}{\sqrt{(a^2+x^2)^3}}.$$

$$1896. \int \frac{\sqrt{(9-x^2)^3}}{x^6} dx. \quad 1897. \int \frac{dx}{x^2 \sqrt{x^2 - 9}}.$$

$$1898. \int \frac{dx}{x \sqrt{1+x^2}}. \quad 1899. \int \frac{dx}{\sqrt{(x^2 - a^2)^3}}.$$

$$1900. \int x^2 \sqrt{4-x^2} dx. \quad 1901. \int \frac{dx}{(x^2+4)\sqrt{4x^2+1}}.$$

$$1902^*. \int \sqrt{\frac{x-1}{x+1}} \frac{dx}{x^2}. \quad 1903^*. \int \frac{dx}{\sqrt{x-x^2}}. \quad 1904^*. \int \frac{(x+1) dx}{x(1+xe^x)}.$$

U zadacima 1905—1909 naći integrale (izvršiti najpre smenu promenljive, a zatim primeniti metod parcijalne integracije).

$$1905. \int e^{\sqrt{x}} dx.$$

$$1906. \int \sin \sqrt{x} dx.$$

$$1907. \int \frac{\arcsin x}{\sqrt{(1-x^2)^3}} dx.$$

$$1908. \int \frac{x^2 \operatorname{arctg} x}{1+x^2} dx.$$

$$1909. \int \frac{\operatorname{arctg} x}{x^2(1+x^2)} dx.$$

## Razni zadaci

U zadacima 1910—2011 naći integrale.

1910.  $\int (x+1)\sqrt{x^2+2x} dx.$       1911.  $\int (1+e^{3x})^2 e^{3x} dx.$

1912.  $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx.$       1913.  $\int \frac{\sin x}{e^{\cos x}} dx.$       1914.  $\int \sqrt{1-e^x} e^x dx.$

1915.  $\int x \cos x^2 dx.$       1916.  $\int (2-3x^{\frac{4}{3}})^{\frac{1}{3}} x^{\frac{1}{3}} dx.$

1917.  $\int \frac{2x^5-3x^2}{1+3x^2-x^6} dx.$       1918.  $\int \frac{\sqrt{x} dx}{1+x^{\frac{3}{2}}}.$

1919.  $\int \frac{dx}{e^x(3+e^{-x})}.$       1920.  $\int \frac{dx}{e^x \sqrt{1-e^{-2x}}}.$

1921.  $\int \frac{2x+3}{\sqrt{1+x^2}} dx.$       1922.  $\int \frac{2x-1}{\sqrt{9x^2-4}} dx.$

1923.  $\int \frac{\cos \sqrt{x}}{\sqrt{x}} dx.$       1924.  $\int \frac{dx}{x\sqrt{3-\ln^2 x}}.$

1925.  $\int \frac{\ln x dx}{x(1-\ln^2 x)}.$       1926.  $\int \frac{x^2-x+1}{\sqrt{(x^2+1)^3}} dx.$

1927.  $\int \frac{(\arctg x)^n}{1+x^2} dx.$       1928.  $\int \frac{d\varphi}{\sin^2 \varphi \cos^2 \varphi}.$       1929.  $\int \frac{\cos 2x}{\cos^2 x} dx.$

1930.  $\int \frac{\sin^4 x dx}{\cos^6 x}.$       1931.  $\int \sqrt{\tg^3 x \sec^4 x} dx.$

1932.  $\int (1-\tg 3x)^2 dx.$       1933.  $\int \frac{x^3 dx}{x+1}.$

1934.  $\int \frac{x dx}{(x-1)^3}.$       1935.  $\int \frac{x dx}{\sqrt{2+4x}}.$

1936.  $\int \frac{x dx}{\sqrt{1+2x}}.$       1937.  $\int x \sqrt{a+x} dx.$

1938.  $\int (\sqrt{\sin x} + \cos x)^2 dx.$       1939.  $\int a^{mx} b^{nx} dx.$

1940.  $\int \frac{dx}{\sqrt{5-2x+x^2}}.$       1941.  $\int \frac{dx}{\sqrt{9x^2-6x+2}}.$



1942.  $\int \frac{dx}{\sqrt{12x-9x^2-2}}$

1943.  $\int \frac{(8x-11)dx}{\sqrt{5+2x-x^2}}$

1944.  $\int \frac{(x+2)dx}{x^2+2x+2}$

1945.  $\int \frac{(x-3)dx}{\sqrt{3-2x-x^2}}$

1946.  $\int \frac{(3x-1)dx}{4x^2-4x+17}$

1947.  $\int \frac{(3x-1)dx}{\sqrt{x^2+2x+2}}$

1948.  $\int \frac{(x-2)dx}{x^2-7x+12}$

1949.  $\int \frac{2x+5}{\sqrt{9x^2+6x+2}} dx.$

1950.  $\int \frac{3-4x}{2x^2-3x+1} dx.$

1951.  $\int \frac{(4-3x)dx}{5x^2+6x+18}$

1952.  $\int \frac{(2-5x)dx}{\sqrt{4x^2+9x+1}}$

1953.  $\int \frac{x dx}{\sqrt{3x^2-11x+2}}$

1954.  $\int \frac{\sqrt{x} dx}{\sqrt{2x+3}}$

1955.  $\int \sqrt{\frac{a-x}{x-b}} dx.$

1956.  $\int \operatorname{arctg} x dx.$

1957.  $\int x \sin x \cos x dx.$

1958.  $\int x^2 \cos \omega x dx.$

1959.  $\int e^{2x} x^3 dx.$

1960.  $\int \frac{\ln \cos x}{\cos^2 x} dx.$

1961.  $\int \frac{\operatorname{ctg} x}{\ln \sin x} dx.$

1962.  $\int \frac{x^7 dx}{(1+x^4)^2}$

1963.  $\int \frac{\cos^2 3x}{\sin 3x} dx.$

1964.  $\int \frac{dx}{1-\sin 3x}$

1965.  $\int \frac{\sin 2x dx}{4-\cos^2 2x}$

1966.  $\int \frac{dx}{e^x+1}$

1967.  $\int \frac{e^x-1}{e^x+1} dx.$

1968.  $\int e^{e^x+x} dx.$

1969.  $\int e^{2x^2+\ln x} dx.$

1970.  $\int \frac{3+x^3}{\sqrt{2+2x^2}} dx.$

1971.  $\int \frac{x \arcsin x}{\sqrt{1-x^2}} dx.$

1972.  $\int \frac{x \cos x}{\sin^3 x} dx.$

1973.  $\int e^x \sin^2 x dx.$

1974.  $\int \frac{(1+\operatorname{tg} x) dx}{\sin 2x}$

1975.  $\int \frac{1 - \operatorname{tg} x}{1 + \operatorname{tg} x} dx.$

1976.  $\int \frac{d\varphi}{\sqrt{3} \cos \varphi + \sin \varphi}.$

1977.  $\int \frac{\sin x dx}{1 + \sin x}.$

1978.  $\int \frac{\sin^2 x \cos x}{(1 + \sin^2 x)} dx.$

1979.  $\int \frac{\sqrt{1 + \cos x}}{\sin x} dx.$

1980.  $\int \frac{\ln \ln x}{x} dx.$

1981.  $\int x^3 e^{x^2} dx.$

1982.  $\int e^{-x^2} x^5 dx.$

1983.  $\int \frac{x^3 dx}{\sqrt{1 + 2x^2}}.$

1984.  $\int \frac{x^4 dx}{\sqrt{(1-x^2)^3}}.$

1985.  $\int \frac{\sqrt{(x^2 - a^2)^5}}{x} dx.$

1986.  $\int \frac{dx}{x^4 \sqrt{x^2 + 4}}.$

1987.  $\int \frac{\sqrt{x^2 - 8}}{x^4} dx.$

1988.  $\int \frac{\sqrt{4 + x^2}}{x^6} dx.$

1989.  $\int \frac{dx}{x^4 \sqrt{x^2 - 3}}.$

1990.  $\int \frac{\sqrt{x} dx}{\sqrt{x^3 + 1}}.$

1991.  $\int \frac{\sqrt{x+1} + 1}{\sqrt{x+1} - 1} dx.$

1992.  $\int \frac{dx}{(2+x)\sqrt{1+x}}.$

1993.  $\int \frac{\sqrt{x} dx}{x(\sqrt{x} + \sqrt{x})}.$

1994.  $\int \frac{\sqrt{x^2 + 2x}}{x} dx.$

1995\*.  $\int \frac{x^7 dx}{(1-x^2)^5}.$

1996.  $\int \frac{dx}{(ax+b)\sqrt{x}}.$

1997.  $\int \frac{\sqrt{1+x^8}}{x^{13}} dx.$

1998.  $\int \frac{x dx}{(1-x^4)^{\frac{3}{2}}}.$

1999.  $\int \frac{x^5 dx}{\sqrt{x^4 + 4}}.$

2000.  $\int \frac{dx}{\sqrt{x}(x-1)}.$

2001.  $\int \frac{\sqrt{1-x^3}}{x^2 \sqrt{x}} dx.$

2002.  $\int \frac{x^4 dx}{(1+x^2)^3}.$

2003.  $\int \frac{3x^2 - 1}{2x\sqrt{x}} \operatorname{arctg} x dx.$

2004.  $\int \frac{e^x(1+e^x) dx}{\sqrt{1-e^{2x}}}.$

2005.  $\int \sqrt{e^x - 1} dx.$

2006\*.  $\int \frac{\ln(x+1) - \ln x}{x(x+1)} dx.$

2007.  $\int \frac{dx}{x^6 + x^4}.$

2008.  $\int \arccos \sqrt{\frac{x}{x+1}} dx.$

2009.  $\int \ln(x + \sqrt{1+x^2}) dx.$

2010.  $\int \sqrt[3]{\frac{\sin^2 x}{\cos^{14} x}} dx.$

2011.  $\int \frac{dx}{\cos^3 x \sqrt{\sin 2x}}.$

### § 3. Osnovne klase integrabilnih funkcija

#### Razlomljene racionalne funkcije

U zadacima 2012—2067 naći integrale

1) Imenitelj ima samo realne različite korene.

2012.  $\int \frac{x dx}{(x+1)(2x+1)}.$

2013.  $\int \frac{x dx}{2x^2-3x-2}.$

2014.  $\int \frac{2x^2+41x-91}{(x-1)(x+3)(x-4)} dx.$

2015.  $\int \frac{dx}{6x^3-7x^2-3x}.$

2016.  $\int \frac{x^5+x^4-8}{x^3-4x} dx.$

2017.  $\int \frac{x^3-1}{4x^3-x} dx.$

2018.  $\int \frac{32x dx}{(2x-1)(4x^2-16x+15)}.$

2019.  $\int \frac{x dx}{x^4-3x^2+2}.$

2020.  $\int \frac{(2x^2-5) dx}{x^4-5x^2+6}.$

2021.  $\int \frac{x^6-2x^4+3x^3-9x^2+4}{x^5-5x^3+4x} dx.$

2) Imenitelj ima samo realne korene, među kojima ima i višestrukih.

2022.  $\int \frac{(x^2-3x+2) dx}{x(x^2+2x+1)}.$

2023.  $\int \left(\frac{x+2}{x-1}\right)^2 \frac{dx}{x}.$

2024.  $\int \frac{x^2 dx}{x^3+5x^2+8x+4}.$

2025.  $\int \frac{x^3+1}{x^3-x^2} dx.$

2026.  $\int \frac{x^3-6x^2+11x-5}{(x-2)^4} dx.$

2027.  $\int \frac{dx}{x^4-x^2}.$

2028.  $\int \frac{x^2 dx}{(x+2)^2(x+4)^2}.$

2029.  $\int \frac{x^3-6x^2+9x+7}{(x-2)^3(x-5)} dx.$

2030.  $\int \frac{1}{8} \left( \frac{x-1}{x+1} \right)^4 dx.$

2031.  $\int \frac{x^3 dx}{(x-1)^2(x^2-1)}.$

2032.  $\int \frac{(x^2-2x+3) dx}{(x-1)(x^3-4x^2+3x)}.$

2033.  $\int \frac{(7x^2-9) dx}{x^4-5x^3+6x^2}.$

2034.  $\int \frac{x^3-2x^2+4}{x^3(x-2)^2} dx.$

2035.  $\int \frac{3x^2+1}{(x^2-1)^3} dx.$

3) Imenitelj ima kompleksne različite korene.

2036.  $\int \frac{dx}{x(x^2+1)}.$

2037.  $\int \frac{dx}{1+x^3}.$

2038.  $\int \frac{x dx}{x^3-1}.$

2039.  $\int \frac{(2x^2-3x-3) dx}{(x-1)(x^2-2x+5)}.$

2040.  $\int \frac{(x^4+1) dx}{x^3-x^2+x-1}.$

2041.  $\int \frac{x^2 dx}{1-x^4}.$

2042.  $\int \frac{dx}{(x^2+1)(x^2+x)}.$

2043.  $\int \frac{dx}{(x+1)^2(x^2+1)}.$

2044.  $\int \frac{(3x^2+x+3) dx}{(x-1)^3(x^2+1)}.$

2045.  $\int \frac{x^5+2x^3+4x+4}{x^4+2x^3+2x^2} dx.$

2046.  $\int \frac{(x^3-6) dx}{x^4+6x^2+8}.$

2047\*.  $\int \frac{dx}{1+x^4}.$

4) Imenitelj ima kompleksne višestruke korene.

2048.  $\int \frac{x^3+x-1}{(x^2+2)^2} dx.$

2049.  $\int \frac{dx}{x(4+x^2)^2(1+x^2)}.$

2050.  $\int \frac{(5x^2-12) dx}{(x^2-6x+13)^2}.$

2051.  $\int \frac{(x+1)^4 dx}{(x^2+2x+2)^3}.$

2052.  $\int \frac{dx}{(x^2+9)^3}.$

2053.  $\int \frac{2x dx}{(1+x)(1+x^2)^2}.$

2054.  $\int \frac{dx}{(1+x^2)^4}.$

2055.  $\int \frac{x^9 dx}{(x^4-1)^2} dx.$

5) Metod Ostrogradskog.

2056.  $\int \frac{x^7+2}{(x^2+x+1)^2} dx.$

2057.  $\int \frac{(4x^2-8x) dx}{(x-1)^2(x^2+1)^2}.$

2058.  $\int \frac{x^2+x+1}{x^5-2x^4+x^3} dx.$

2059.  $\int \frac{x^6+x^4-4x^2-2}{x^3(x^2+1)^2} dx.$

$$2060. \int \frac{(x^2-1)^2 dx}{(1+x)(1+x^2)^3}.$$

$$2061. \int \frac{dx}{x^4(x^3+1)^2}.$$

$$2062. \int \frac{dx}{(x^2+2x+10)^3}.$$

$$2063. \int \frac{(x+2) dx}{(x^2+2x+2)^3}.$$

$$2064. \int \frac{x^5-x^4-26x^2-24x-25}{(x^2+4x+5)^2(x^2+4)^2} dx.$$

$$2065. \int \frac{3x^4+4}{x^2(x^2+1)^3} dx.$$

$$2066. \int \frac{5-3x+6x^2+5x^3-x^4}{x^5-x^4-2x^3+2x^2+x-1} dx.$$

$$2067. \int \frac{9 dx}{5x^2(3-2x^2)^3}.$$

### Neke iracionalne funkcije

U zadacima 2068—2089 naći integrale.

1) Funkcije oblika

$$R\left(x, \sqrt{\frac{ax+b}{a_1x+b_1}}, \sqrt[p]{\frac{ax+b}{a_1x+b_1}}, \dots\right).$$

$$2068. \int \frac{dx}{x(\sqrt{x}+\sqrt{x^2})^5}.$$

$$2069. \int \frac{dx}{\sqrt{x}+\sqrt{x}+2\sqrt{x^4}}.$$

$$2070. \int \frac{x dx}{(x+1)^{\frac{1}{2}}+(x+1)^{\frac{1}{3}}}.$$

$$2071. \int \sqrt{\frac{1-x}{1+x}} \frac{dx}{x}.$$

$$2072. \int \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}} dx.$$

$$2073. \int \frac{x^2+\sqrt{1+x}}{\sqrt[4]{1+x}} dx.$$

$$2074. \int \sqrt[3]{\frac{1-x}{1+x}} \frac{dx}{x}.$$

$$2075^*. \int \frac{dx}{\sqrt[4]{(x-1)^3(x+2)^5}}.$$

2) Diferencijalni binomi  $x^m(a+bx^n)^p dx$ .

$$2076. \int \sqrt{x}(1+\sqrt[4]{x})^4 dx.$$

$$2077. \int x^{-1}\left(1+x^{\frac{1}{3}}\right)^{-3} dx.$$

$$2078. \int \frac{dx}{x\sqrt{x^2+1}}.$$

$$2079. \int x^5\sqrt[4]{(1+x^3)^2} dx.$$

$$2080. \int \frac{dx}{\sqrt[4]{1+x^3}}.$$

$$2081. \int \frac{dx}{\sqrt[4]{1+x^4}}.$$

$$2082. \int \frac{\sqrt{1-x^4}}{x^5} dx.$$

$$2083. \int \frac{\sqrt[3]{1+\sqrt{x}}}{\sqrt{x}} dx.$$

$$2084. \int \frac{\sqrt[4]{1+\sqrt{x}}}{x} dx.$$

$$2085. \int \frac{dx}{x \sqrt[4]{1+x^5}}.$$

$$2086. \int \frac{\sqrt{1+x^3}}{x^2} dx.$$

$$2087. \int \frac{dx}{x^{11} \sqrt{1+x^4}}.$$

$$2088. \int \sqrt{x(1-x^2)} dx.$$

$$2089. \int \sqrt[3]{1+\sqrt{x}} dx.$$

### Trigonometrijske funkcije

U zadacima 2090—2131 naći integrale.

$$2090. \int \sin^3 x \cos^2 x dx.$$

$$2091. \int \frac{\sin^3 x}{\cos^4 x} dx.$$

$$2092. \int \frac{dx}{\cos x \cdot \sin^3 x}.$$

$$2093. \int \frac{\sin^4 x}{\cos^2 x} dx.$$

$$2094. \int \frac{dx}{\cos^3 x \sin^3 x}.$$

$$2095. \int \frac{dx}{\sin^4 x \cos^4 x}.$$

$$2096. \int \frac{\sin x dx}{(1-\cos x)^2}.$$

$$2097. \int \frac{\cos x dx}{(1-\cos x)^2}.$$

$$2098. \int \cos^6 x dx.$$

$$2099. \int \operatorname{ctg}^4 x dx.$$

$$2100. \int \operatorname{tg}^5 x dx.$$

$$2101. \int \frac{dx}{\operatorname{tg}^3 x}.$$

$$2102. \int \frac{dx}{\sin^3 x}.$$

$$2103. \int \frac{\cos^4 x + \sin^4 x}{\cos^2 x - \sin^2 x} dx.$$

$$2104. \int \frac{dx}{(\sin x + \cos x)^2}.$$

$$2105. \int \frac{dx}{\sin x + \cos x}.$$

$$2106. \int \frac{dx}{a \cos x + b \sin x}.$$

$$2107. \int \frac{dx}{\operatorname{tg} x \cdot \cos 2x}.$$

$$2108. \int \frac{\cos^2 x dx}{\sin x \cdot \cos 3x}.$$

$$2109. \int \frac{dx}{1 + \operatorname{tg} x}.$$

2110.  $\int \frac{dx}{5-3 \cos x}$ .

2111.  $\int \frac{dx}{5+4 \sin x}$ .

2112.  $\int \frac{2-\sin x}{2+\cos x} dx$ .

2113.  $\int \frac{\sin^2 x dx}{1-\operatorname{tg} x}$ .

2114.  $\int \frac{dx}{4+\operatorname{tg} x+4 \operatorname{ctg} x}$ .

2115.  $\int \frac{dx}{(\sin x+2 \sec x)^2}$ .

2116.  $\int \frac{dx}{5-4 \sin x+3 \cos x}$ .

2117.  $\int \frac{dx}{4-3 \cos^2 x+5 \sin^2 x}$ .

2118.  $\int \frac{dx}{1+\sin^2 x}$ .

2119.  $\int \frac{dx}{1-\sin^4 x}$ .

2120.  $\int \frac{dx}{a^2 \sin^2 x+b^2 \cos^2 x}$ .

2121.  $\int \frac{dx}{\sin^2 x+\operatorname{tg}^2 x}$ .

2122.  $\int \frac{\cos x dx}{\sin^3 x-\cos^3 x}$ .

2123.  $\int \sqrt{1+\sin x} dx$ .

2124.  $\int \frac{\sqrt{\operatorname{tg} x}}{\sin x \cos x}$ .

2125\*.  $\int \frac{\sqrt{\sin^3 2x}}{\sin^5 x} dx$ .

2126.  $\int \frac{dx}{\sqrt{\sin^3 x \cos^3 x}}$ .

2127.  $\int \frac{dx}{\sqrt{1-\sin^4 x}}$ .

2128.  $\int \sqrt{1+\operatorname{cosec} x} dx$ .

2129.  $\int \frac{(\cos 2x-3) dx}{\cos^4 x \sqrt{4-\operatorname{ctg}^2 x}}$ .

2130.  $\int \frac{dx}{\sin \frac{x}{2} \sqrt{\cos^3 \frac{x}{2}}}$ .

2131.  $\int \sqrt{\operatorname{tg} x} dx$ .

### Hiperbolične funkcije

U zadactma 2132—2150 naći integrale.

2132.  $\int \operatorname{ch} x dx$ .

2133.  $\int \operatorname{ch} x dx$ .

2134.  $\int \frac{dx}{\operatorname{ch}^2 x}$ .

2135.  $\int \frac{e^x dx}{\operatorname{ch} x+\operatorname{sh} x}$ .

2136.  $\int (\operatorname{ch}^2 ax+\operatorname{sh}^2 ax) dx$ .

2137.  $\int \operatorname{sh}^2 x dx$ .

2138.  $\int \operatorname{th}^2 x \, dx.$

2139.  $\int \operatorname{cth}^2 x \, dx.$

2140.  $\int \operatorname{sh}^3 x \, dx.$

2141.  $\int \operatorname{ch}^3 x \, dx.$

2142.  $\int \operatorname{th}^4 x \, dx.$

2143.  $\int \operatorname{sh}^2 x \operatorname{ch}^3 x \, dx.$

2144.  $\int \operatorname{cth}^5 x \, dx.$

2145.  $\int \frac{dx}{\operatorname{sh} x \operatorname{ch} x}.$

2146.  $\int \frac{dx}{\operatorname{sh} x}.$

2147.  $\int \frac{dx}{(1 + \operatorname{ch} x)^2}.$

2148.  $\int \sqrt{\operatorname{th} x} \, dx.$

2149.  $\int \frac{x \, dx}{\operatorname{ch}^2 x}.$

2150.  $\int \frac{e^{2x} \, dx}{\operatorname{sh}^4 x}.$

Funkcije oblika  $R(x, \sqrt{ax^2 + bx + c})$

U zadacima 2151—2174 naći integrale.

2151\*.  $\int \frac{dx}{x\sqrt{x^2 + x + 1}}.$

2152.  $\int \frac{dx}{x\sqrt{x^2 + 4x - 4}}.$

2153.  $\int \frac{dx}{x\sqrt{x^2 + 2x - 1}}.$

2154.  $\int \frac{dx}{x\sqrt{2 + x - x^2}}.$

2155.  $\int \frac{\sqrt{2x + x^2}}{x^2} \, dx.$

2156.  $\int \frac{dx}{(x-1)\sqrt{x^2 + x + 1}}.$

2157.  $\int \frac{dx}{(2x-3)\sqrt{4x-x^2}}.$

2158.  $\int \sqrt{x^2 - 2x - 1} \, dx.$

2159.  $\int \sqrt{3x^2 - 3x + 1} \, dx.$

2160.  $\int \sqrt{1 - 4x - x^2} \, dx.$

2161.  $\int \frac{dx}{x - \sqrt{x^2 - x + 1}}.$

2162.  $\int \frac{dx}{x^2(x + \sqrt{1 + x^2})}.$

2163.  $\int \frac{dx}{1 + \sqrt{x^2 + 2x + 2}}.$

2164.  $\int \frac{x^2 \, dx}{\sqrt{1 - 2x - x^2}}.$

2165.  $\int \frac{(2x^2 - 3x) \, dx}{\sqrt{x^2 - 2x + 5}}.$

2166.  $\int \frac{3x^2 - 5x}{\sqrt{3 - 2x - x^2}} \, dx.$

2167.  $\int \frac{3x^3 \, dx}{\sqrt{x^2 + 4x + 5}}.$

2168.  $\int \frac{x^3 - x + 1}{\sqrt{x^2 + 2x + 2}} \, dx.$

2169.  $\int \frac{3x^3 - 8x + 5}{\sqrt{x^2 - 4x - 7}} \, dx.$

2170.  $\int \frac{x^4 \, dx}{\sqrt{x^2 + 4x + 5}}.$



$$2171. \int \frac{dx}{(x^3 + 3x^2 + 3x + 1)\sqrt{x^2 + 2x - 3}}$$

$$2172. \int \frac{\sqrt{1+x^2}}{2+x^2} dx.$$

$$2173. \frac{(x-1) dx}{x^2\sqrt{2x^2-2x+1}}$$

$$2174. \int \frac{(2x+3) dx}{(x^2+2x+3)\sqrt{x^2+2x+4}}$$

### Razne funkcije

U zadacima 2175—2230 naći integrale.

$$2175. \int \frac{x^3 dx}{(x-1)^{12}}$$

$$2176. \int \frac{x dx}{x-\sqrt{x^2-1}}$$

$$2177. \int x \sqrt[3]{a+x} dx.$$

$$2178. \int \frac{dx}{ae^{mx} + be^{-mx}}$$

$$2179. \int \frac{x\sqrt{1+x}}{\sqrt{1-x}}$$

$$2180. \int \frac{x^4 dx}{(x^2-1)(x+2)}$$

$$2181. \int \frac{dx}{1-x^4}$$

$$2182. \int \frac{dx}{(x^4-1)^2}$$

$$2183. \int \frac{\ln(x+1) dx}{\sqrt{x+1}}$$

$$2184. \int (x^2 + 3x + 5) \cos 2x dx.$$

$$2185. \int x^2 \operatorname{sh} x dx.$$

$$2186. \int \operatorname{arctg}(1 + \sqrt{x}) dx.$$

$$2187. \int \frac{\arcsin x dx}{x^2}$$

$$2188. \int e^{\sqrt[3]{x}} dx.$$

$$2189. \int xe^{\sqrt[3]{x}} dx.$$

$$2190. \int (x^3 - 2x^2 + 5) e^{3x} dx.$$

$$2191. \int \sin \sqrt{x} dx.$$

$$2192. \int \frac{dx}{x^3(x-1)^{\frac{1}{2}}}$$

$$2193. \int \frac{dx}{x-\sqrt{x^2-1}}$$

$$2194. \int \frac{\sqrt{(1+x^2)^5}}{x^6} dx.$$

$$2195. \int \frac{x^4 dx}{\sqrt{x^2+1}}$$

$$2196. \int \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}} \frac{dx}{x}$$

$$2197. \int \frac{dx}{x^3\sqrt{(1+x)^3}}$$

$$2198. \int \frac{\sqrt{2x+1}}{x^2} dx.$$

2199. 
$$\int \frac{x^4 dx}{x^{15}-1}.$$

2201. 
$$\int \frac{dx}{1+\cos^2 x}.$$

2203. 
$$\int x \ln(1+x^3) dx.$$

2205. 
$$\int \frac{x \ln x}{\sqrt{(x^2-1)^3}} dx.$$

2207. 
$$\int xe^{x^2}(x^2+1) dx.$$

2209. 
$$\int \frac{dx}{\sin^3 x \cos^5 x}.$$

2211. 
$$\int \frac{dx}{1+\sin x+\cos x}.$$

2213. 
$$\int \frac{(x^2-1) dx}{x\sqrt{x^4+3x^2+1}}.$$

2215. 
$$\int \frac{xe^x dx}{(1+x)^2}.$$

2217. 
$$\int \frac{\operatorname{arctg} x dx}{x^4}.$$

2219. 
$$\int \frac{\operatorname{arctg} x}{(1+x)^3} dx.$$

2221. 
$$\int \frac{(e^{3x}+e^x) dx}{e^{4x}-e^{2x}+1}.$$

2223. 
$$\int \frac{\operatorname{tg} x dx}{1+\operatorname{tg} x+\operatorname{tg}^2 x}.$$

2225. 
$$\int \frac{(3+x^2)^2 x^3 dx}{(1+x^2)^3}.$$

2227. 
$$\int \frac{dx}{\sin^4 x+\cos^4 x}.$$

2229\*. 
$$\int \frac{x^2-1}{x^2+1} \cdot \frac{dx}{\sqrt{1+x^4}}.$$

2200. 
$$\int \frac{dx}{\sin 2x-2 \sin x}.$$

2202. 
$$\int \frac{dx}{a^2-b^2 \cos^2 x}.$$

2204. 
$$\int \frac{(\ln x-1) dx}{\ln^2 x}.$$

2206. 
$$\int x^2 e^x \cos x dx.$$

2208. 
$$\int \frac{dx}{\sqrt{\sin^3 x \cos^5 x}}.$$

2210. 
$$\int \frac{\sin 2x dx}{\cos^4 x+\sin^4 x}.$$

2212. 
$$\int \sqrt{\operatorname{tg}^2 x+2} dx.$$

2214. 
$$\int \frac{dx}{(2x-3)\sqrt{4x-x^2}}.$$

2216. 
$$\int \frac{xe^x dx}{\sqrt{1+e^x}}.$$

2218. 
$$\int \frac{x \operatorname{arctg} x}{(1+x^2)^2} dx.$$

2220. 
$$\int \frac{dx}{(1-2^x)^4}.$$

2222. 
$$\int \frac{dx}{\sqrt{1+e^x+e^{2x}}}.$$

2224. 
$$\int \sin^8 x dx.$$

2226. 
$$\int \frac{x^2-8x+7}{(x^2-3x-10)^2} dx.$$

2228. 
$$\int \frac{(x+\sin x) dx}{1+\cos x}.$$

2230. 
$$\int e^{\sin x} \frac{x \cos^3 x - \sin x}{\cos^2 x} dx.$$

(Ova stranica je ostavljena prazna)

## REZULTATI

$$1676. \frac{2}{3}\sqrt{x^3} + C. \quad 1677. \frac{mx^{\frac{n}{m}+1}}{n+m} + C. \quad 1678. C - \frac{1}{x}.$$

$$1679. \approx 0,4343 \cdot 10^x + C. \quad 1680. \frac{(ae)^x}{1+\ln a} + C. \quad 1681. \sqrt{x} + C.$$

$$1682. \sqrt{\frac{2h}{g}} + C. \quad 1683. \approx 4,1 x^{0,33} + C. \quad 1684. u - u^2 + C.$$

$$1685. \frac{2}{5}x^2\sqrt{x} + x + C. \quad 1686. C - \frac{2}{3x\sqrt{x}} - e^x + \ln|x|.$$

$$1687. C - 10x^{-0,2} + 15x^{0,2} - 3,62x^{1,28}. \quad 1688. z - 2\ln|z| - \frac{1}{z} + C.$$

$$1689. \frac{2x^2 - 12x - 6}{3\sqrt{x}} + C.$$

1690.  $\frac{3}{2} \sqrt{x^2} + \frac{18}{7} x \sqrt{x} + \frac{9}{5} x^3 \sqrt{x^2} + \frac{6}{13} x^2 \sqrt{x} + C.$   
 1691.  $\frac{6}{7} \sqrt{x^7} - \frac{4}{3} \sqrt{x^3} + C.$  1692.  $\frac{1}{\sqrt{3}} \arcsin x + C.$   
 1693.  $3x - \frac{2(1,5)^x}{\ln 1,5} + C.$  1694.  $\frac{1}{2} (\operatorname{tg} x + x) + C.$  1695.  $C - \operatorname{ctg} x - \operatorname{tg} x.$   
 1696.  $\operatorname{tg} x - x + C.$  1697.  $C - \operatorname{ctg} x - x.$  1698.  $x - \sin x + C.$   
 1699.  $\operatorname{arctg} x - \frac{1}{x} + C.$  1700.  $\ln |x| + 2 \operatorname{arctg} x + C.$  1701.  $\operatorname{tg} x + C.$   
 1702.  $\frac{\pi}{2} x + C.$  1703.  $\frac{\sin^2 x}{2} + C.$  1704.  $\frac{\operatorname{tg}^4 x}{4} + C.$  1705.  $2 \sqrt{1+x^2} + C.$   
 1706.  $\frac{(x+1)^{16}}{16} + C.$  1707.  $C - \frac{1}{8(2x-3)^4}.$  1708.  $\frac{(a+bx)^{1-C}}{b(1-C)} + C_1.$   
 1709.  $C - \frac{5}{33} (8-3x)^{\frac{11}{5}}.$  1710.  $C - \frac{\sqrt{(8-2x)^3}}{3}.$  1711.  $\frac{3m}{b} \sqrt[3]{a+bx} + C.$   
 1712.  $\frac{2}{3} \sqrt{(x^2+1)^3} + C.$  1713.  $C - \frac{1}{3} \sqrt{(1-x^2)^3}.$   
 1714.  $\frac{5}{18} \sqrt{(x^3+2)^6} + C.$  1715.  $\sqrt{x^2+1} + C.$   
 1716.  $\frac{2}{5} \sqrt{4+x^3} + C.$  1717.  $\frac{3}{8} \sqrt[3]{(x^4+1)^2} + C.$   
 1718.  $\sqrt{3x^2-5x+6} + C.$  1719.  $\frac{1}{4} \sin^4 x + C.$  1720.  $\sec x + C.$   
 1721.  $3 \sqrt[3]{\sin x} + C.$  1722.  $C - \frac{2}{5} \cos^5 x.$  1723.  $\frac{2}{3} \sqrt{(\ln x)^3} + C.$   
 1724.  $\frac{(\operatorname{arctg} x)^3}{3} + C.$  1725.  $C - \frac{1}{2(\arcsin x)^2}.$  1726.  $3 \sqrt{1+\operatorname{tg} x} + C.$   
 1727.  $\sin \sin 3x + C.$  1728.  $\operatorname{tg}(1+\ln x) + C.$   
 1729.  $\frac{1}{3} \sin 3x + C.$  1730.  $x \cos \alpha - \frac{1}{2} \sin 2x + C.$  1731.  $C - \frac{1}{2} \cos(2x-3).$   
 1732.  $C - \frac{1}{2} \sin(1-2x).$  1733.  $\frac{1}{2} \operatorname{tg}\left(2x - \frac{\pi}{4}\right) + C$  ili  $\frac{1}{2} \operatorname{tg} 4x - \sec 4x + C.$   
 1734.  $C - \cos(e^x).$  1735.  $\ln(1+x^2) + C.$  1736.  $\ln |\arcsin x| + C.$   
 1737.  $\ln(x^2-3x+8) + C.$  1738.  $\frac{1}{2} \ln |2x-1| + C.$  1739.  $\frac{1}{c} \ln |cx+m| + C.$   
 1740.  $\frac{1}{2} \ln(x^2+1) + C.$  1741.  $\frac{1}{3} \ln |x^2+1| + C.$  1742.  $\ln(e^x+1) + C.$

$$1743. \frac{1}{2} \ln(e^{2x} + a^2) + C. \quad 1744. C - \ln |\cos x|. \quad 1745. \ln |\sin x| + C.$$

$$1746. C - \frac{1}{3} \ln |\cos 3x|. \quad 1747. \frac{1}{2} \ln |\sin(2x+1)| + C.$$

$$1748. C - \ln(1 + \cos^2 x). \quad 1749. \ln |\ln x| + C.$$

$$1750. \frac{\ln^{m+1} x}{m+1} + C, \text{ ako je } m \neq -1 \text{ i } \ln |\ln x| + C, \text{ ako je } m = -1.$$

$$1751. e^{\sin x} + C. \quad 1752. e^{\sin x} + C. \quad 1753. \frac{a^{3x}}{3 \ln a} + C. \quad 1754. C - \frac{a^{-x}}{\ln a}.$$

$$1755. C - \frac{e^{1-3x}}{3}. \quad 1756. 0,5 e^{x^2} + C. \quad 1757. C - \frac{1}{3} e^{-x^3}. \quad 1758. \arcsin \frac{x}{3} + C.$$

$$1759. \frac{1}{5} \arcsin 5x + C. \quad 1760. \frac{1}{3} \operatorname{arctg} 3x + C. \quad 1761. \arcsin \frac{x}{2} + C.$$

$$1762. \frac{1}{3\sqrt{2}} \operatorname{arctg} \frac{\sqrt{2}}{3} x + C. \quad 1763. \frac{1}{3} \arcsin \frac{3x}{2} + C.$$

$$1764. \frac{1}{2} \operatorname{arctg} x^2 + C. \quad 1765. \frac{1}{2} \arcsin \frac{x^2}{a} + C. \quad 1766. \frac{1}{6} \operatorname{arctg} \frac{x^3}{2} + C.$$

$$1767. \frac{1}{4} \arcsin x^4 + C. \quad 1768. \frac{1}{2} \operatorname{arctg} \frac{e^x}{2} + C. \quad 1769. \frac{\arcsin 2^x}{\ln 2} + C.$$

$$1770. \frac{1}{a} \operatorname{arctg} \frac{\sin \alpha}{a} + C. \quad 1771. e^x + e^{-x} + C.$$

$$1772. \frac{1}{3} e^{3x} + \frac{3}{2} e^{2x} + 3e^x + x + C. \quad 1773. \arcsin x - \sqrt{1-x^2} + C.$$

$$1774. \frac{3}{2} \ln(x^2+9) - \frac{1}{3} \operatorname{arctg} \frac{x}{3} + C. \quad 1775. \arcsin x + \sqrt{1-x^2} + C.$$

$$1776. \frac{1}{2} \operatorname{arctg} x^2 - \frac{1}{4} \ln(x^4+1) + C. \quad 1777. \arcsin x + \frac{1}{\sqrt{1-x^2}} + C.$$

$$1778. \frac{2}{3} [x^3 - \sqrt{(x^2-1)^2}] - x + C. \quad 1779. C - 2\sqrt{1-x^2} - \frac{2}{3} \sqrt{(\arcsin x)^3}.$$

$$1780. C - \frac{1}{9} [\sqrt{1-9x^2} + (\arccos 3x)^2]. \quad 1781. x - 4 \ln |x+4| + C.$$

$$1782. \frac{1}{2} \left[ x - \frac{1}{2} \ln |2x+1| \right] + C. \quad 1783. \frac{A}{b} \left[ x - \frac{a}{b} \ln |bx+a| \right] + C.$$

$$1784. C - x - 6 \ln |3-x|. \quad 1785. 2x + 3 \ln |x-2| + C.$$

$$1786. \frac{1}{2} x + \frac{5}{4} \ln |2x-1| + C. \quad 1787. x + \ln(x^2+1) + C.$$

$$1788. x - 2 \operatorname{arctg} x + C. \quad 1789. C - \frac{1}{4} x^4 - \frac{1}{3} x^3 - \frac{1}{2} x^2 - x - \ln |1-x|.$$

$$1790. \frac{x^3}{3} - x + \operatorname{arctg} x + C. \quad 1791. \ln \left| \frac{x-1}{x} \right| + C. \quad 1792. \ln \left| \frac{x}{x+1} \right| + C.$$

$$1793. \frac{1}{5} \ln \left| \frac{2x-3}{x+1} \right| + C. \quad 1794. \frac{1}{b-a} \ln \left| \frac{b-x}{a-x} \right| + C.$$

$$1795. x + \ln \left| \frac{x-1}{x+1} \right| + C. \quad 1796. \frac{1}{3} \ln \left| \frac{x-5}{x-2} \right| + C.$$

$$1797. \frac{1}{7} \ln \left| \frac{x-2}{x-5} \right| + C. \quad 1798. \frac{1}{12} \ln \left| \frac{2x-3}{2x+3} \right| + C$$

$$1799. \frac{1}{2\sqrt{6}} \ln \left| \frac{\sqrt{2+x}\sqrt{3}}{\sqrt{2-x}\sqrt{3}} \right| + C. \quad 1800. \frac{1}{2} \operatorname{arctg} \frac{x-1}{2} + C.$$

$$1801. \frac{1}{\sqrt{2}} \operatorname{arctg} \frac{x+1}{\sqrt{2}} + C. \quad 1802. \frac{2}{3} \operatorname{arctg} \frac{1-2x}{3} + C.$$

$$1803. \frac{1}{4} \operatorname{arctg} \frac{2x+1}{2} + C. \quad 1804. \frac{1}{2} \arcsin (2x+3) + C.$$

$$1805. \arcsin (x-2) + C. \quad 1806. \frac{1}{3} \arcsin \frac{3x-1}{3} + C.$$

$$1807. \frac{1}{3} \arcsin \frac{3x+1}{\sqrt{3}} + C. \quad 1808. \frac{x}{2} + \frac{\sin 2x}{4} + C.$$

$$1809. \frac{x}{2} - \frac{\sin 2x}{4} + C. \quad 1810. C - \operatorname{ctg} \frac{x}{2}. \quad 1811. \operatorname{tg} \left( \frac{x}{2} - \frac{\pi}{4} \right) + C.$$

$$1812. 2 \operatorname{tg} \frac{x}{2} - x + C. \quad 1813. 2 \operatorname{tg} \left( \frac{x}{2} + \frac{\pi}{4} \right) - x + C.$$

$$1814. \frac{1}{3} \operatorname{tg}^3 x + C. \quad 1815. \ln (2 + \sin 2x) + C.$$

$$1816. C - \frac{1}{4} \left( \frac{\cos 4x}{2} + \cos 2x \right). \quad 1817. \frac{1}{10} \sin 5x + \frac{1}{2} \sin x + C.$$

$$1818. \frac{1}{6} \sin 3x - \frac{1}{14} \sin 7x + C.$$

$$1819. \frac{1}{8} \left( 2x + \sin 2x + \frac{1}{2} \sin 4x + \frac{1}{3} \sin 6x \right) + C.$$

$$1820. \ln \left| \operatorname{tg} \left( \frac{\pi}{4} + \frac{x}{2} \right) \right| + C. \quad 1821. \ln (1 + \sin x) + C.$$

$$1822. \frac{\cos^2 x}{2} - \ln |\cos x| + C. \quad 1823. \frac{1}{\sin x} - \frac{1}{3 \sin^3 x} + C.$$

$$1824. 2 \sqrt{\cos \alpha} \left( \frac{\cos^2 \alpha}{5} - 1 \right) + C. \quad 1825. \operatorname{tg} x + \frac{1}{3} \operatorname{tg}^3 x + C.$$

$$1826. \sin x - \frac{\sin^3 x}{3} + C. \quad 1827. \frac{1}{3} \operatorname{tg}^3 x - \operatorname{tg} x + x + C.$$

$$1828. C - \cos x + \frac{2}{3} \cos^3 x - \frac{1}{5} \cos^5 x.$$

$$1829. \frac{3}{8} x - \frac{1}{4} \sin 2x + \frac{1}{32} \sin 4x + C.$$

$$1830. \frac{1}{2} \operatorname{tg}^2 x + \ln |\cos x| + C. \quad 1831. C - \operatorname{ctg} x - \frac{2}{3} \operatorname{ctg}^3 x - \frac{1}{5} \operatorname{ctg}^5 x.$$

$$1832. \frac{1}{4} \sin 2x - \frac{1}{2} x \cos 2x + C. \quad 1833. x \sin x + \cos x + C.$$

$$1834. C - e^{-x}(x+1). \quad 1835. \frac{3^x}{\ln^2 3} (x \ln 3 - 1) + C.$$

$$1836. \frac{x^{n+1}}{n+1} \left( \ln x - \frac{1}{n+1} \right) + C. \quad 1837. \frac{x^2+1}{2} \operatorname{arctg} x - \frac{x}{2} + C.$$

$$1838. x \arccos x \sqrt{1-x^2} + C. \quad 1839. x \operatorname{arctg} \sqrt{x} - \sqrt{x} + \operatorname{arctg} \sqrt{x} + C.$$

$$1840. 2\sqrt{x+1} \arcsin x + 4\sqrt{1-x} + C.$$

$$1841. x \operatorname{tg} x - \frac{x^2}{2} + \ln |\cos x| + C.$$

$$1842. \frac{x^2}{4} + \frac{1}{4} x \sin 2x + \frac{1}{8} \cos 2x + C. \quad 1843. C - \frac{1}{2x^2} \lg(x\sqrt{e}).$$

$$1844. \sqrt{1+x^2} \operatorname{arctg} x - \ln(x + \sqrt{1+x^2}) + C.$$

$$1845. 2(\sqrt{x} - \sqrt{1-x} \arcsin \sqrt{x}) + C.$$

$$1846. x \ln(x^2+1) - 2x + 2 \operatorname{arctg} x + C. \quad 1847. C - \frac{x}{2(1+x^2)} + \frac{1}{2} \operatorname{arctg} x.$$

$$1848. x^2 \sqrt{1+x^2} - \frac{2}{3} \sqrt{(1+x^2)^3} + C.$$

$$1849. \frac{(x^3+1) \ln(1+x)}{3} - \frac{x^3}{9} + \frac{x^2}{6} - \frac{x}{3} + C. \quad 1850. C - e^{-x}(2+2x+x^2).$$

$$1851. e^x(x^3 - 3x^2 + 6x - 6) + C. \quad 1852. a^x \left( \frac{x^2}{\ln a} - \frac{2x}{\ln^2 a} + \frac{2}{\ln^3 a} \right) + C.$$

$$1853. C - x^3 \cos x + 3x^2 \sin x + 6x \cos x - 6 \sin x.$$

$$1354. \frac{1}{6} x^3 + \frac{1}{4} x^2 \sin 2x + \frac{1}{4} x \cos 2x - \frac{1}{8} \sin 2x + C.$$

$$1855. x(\ln^2 x - 2 \ln x + 2) + C. \quad 1856. C - \frac{1}{x}(\ln^3 x + 3 \ln^2 x + 6 \ln x + 6).$$

$$1857. C - \frac{8}{27 \sqrt{x^3}} \left( \frac{9}{4} \ln^2 x + 3 \ln x + 2 \right).$$

$$1858. x(\arcsin x)^2 + 2 \arcsin x \cdot \sqrt{1-x^2} - 2x + C.$$

$$1859. \frac{x^2+1}{2} (\operatorname{arctg} x)^2 - x \operatorname{arctg} x + \frac{1}{2} \ln(1+x^2) + C.$$



$$1860. \frac{e^x (\sin x - \cos x)}{2} + C. \quad 1861. \frac{e^{3x}}{13} (\sin 2x - 5 \cos 2x) + C.$$

$$1862. \frac{e^{ax}}{a^2 + n^2} (n \sin nx + a \cos nx) + C. \quad 1863. \frac{x}{2} \sin \ln x - \cos \ln x + C.$$

$$1864. \frac{x}{2} (\cos \ln x + \sin \ln x) + C.$$

$$1865^*. C - \frac{x}{2} \sqrt{1-x^2} + \frac{1}{2} \arcsin x. \quad \left( \text{Staviti } dv = \frac{x dx}{\sqrt{1-x^2}}, \text{ a zatim napisati } \int \sqrt{1-x^2} dx$$

u obliku  $\int \frac{1-x^2}{\sqrt{1-x^2}} dx.$ )

$$1866^*. \frac{x}{2} \sqrt{a^2+x^2} + \frac{a^2}{2} \ln(x + \sqrt{a^2+x^2}) + C. \quad (\text{Staviti } u = \sqrt{x^2+a^2}).$$

$$1867. \frac{x-2}{x+1} e^x + C. \quad 1868. \frac{1}{2} [(x^2-1) \sin x - (x-1)^2 \cos x] e^x + C.$$

$$1869. 2[\sqrt{x+1} - \ln(1 + \sqrt{x+1})] + C.$$

$$1870. \frac{2\sqrt{x-1}}{35} (5x^3 + 6x^2 + 8x + 16) + C.$$

$$1871. C - \frac{11}{2(x-2)^2} - \frac{4}{x-2}. \quad 1872. \ln \left| \frac{\sqrt{x+1}-1}{\sqrt{x+1}+1} \right| + C.$$

$$1873. 2\sqrt{x-2} + \sqrt{2} \operatorname{arctg} \sqrt{\frac{x-2}{2}} + C.$$

$$1874. 2[\sqrt{x} - \ln(1 - \sqrt{x})] + C. \quad 1875. 2 \operatorname{arctg} \sqrt{x} + C.$$

$$1876. 2(\sqrt{x} - \operatorname{arctg} \sqrt{x}) + C.$$

$$1877. \frac{3}{2} (x+1)^{\frac{2}{3}} - 3(x+1)^{\frac{1}{3}} + 3 \ln |1 + \sqrt[3]{x+1}| + C.$$

$$1878. \frac{2}{a} [\sqrt{ax+b} - m \ln |\sqrt{ax+b} + m|] + C.$$

$$1879. x + \frac{6\sqrt{x^3}}{5} + \frac{3\sqrt{x^2}}{2} + 2\sqrt{x} + 3\sqrt[3]{x} + 6\sqrt{x} + 6 \ln |\sqrt{x}-1| + C.$$

$$1880. 3\sqrt[3]{x} + 3 \ln |\sqrt[3]{x}-1| + C.$$

$$1881. 2\sqrt{x} - 4\sqrt[4]{x} + 4 \ln(1 + \sqrt[4]{x}) + C.$$

$$1882. \frac{6}{5} \left[ \sqrt[6]{x^3} + 2\sqrt[12]{x^3} + 2 \ln \left| \sqrt[12]{x^3}-1 \right| \right] + C.$$

$$1883. \frac{4}{21} (3e^x - 4) \sqrt[4]{(e^x +)^3} + C. \quad 1884. \ln \left| \frac{\sqrt{1+e^x}-1}{\sqrt{1+e^x}+1} \right| + C.$$

$$1885. 2\sqrt{1+\ln x} - \ln |\ln x| + 2 \ln |\sqrt{1+\ln x}-1| + C.$$

$$1886. 0,4 \sqrt{(1+\cos^2 x)^3 (3-2\cos^2 x)} + C. \quad 1887. \frac{1}{2} \ln^2 \lg x + C.$$

$$1888. C - \frac{2}{9} \sqrt{a^3 - x^3} 2a^3 + x^3).$$

$$1889. \frac{x^2-4}{2} - \frac{8}{x^2+4} + 4 \ln |x^2-4| + C.$$

$$1890. C - \frac{\sqrt{x^2+a^2}}{a^2 x}. \quad 1891. \frac{a^2}{2} \arcsin \frac{x}{a} - \frac{x}{2} \sqrt{a^2-x^2} + C.$$

$$1892. C - \frac{1}{a} \arcsin \frac{a}{x}. \quad 1893. C - \frac{\sqrt{(1+x^2)^3}}{3x^3}$$

$$1894. C - \frac{\sqrt{1-x^2}}{x} - \arcsin x. \quad 1895. \frac{x}{a^2 \sqrt{x^2+a^2}} + C.$$

$$1896. C - \frac{\sqrt{(9-x^2)^5}}{45x^5}. \quad 1897. \frac{\sqrt{x^2-9}}{9x} + C.$$

$$1898. \ln \frac{|x|}{1+\sqrt{x^2+1}} + C. \quad 1899. C - \frac{x}{a^2 \sqrt{x^2-a^2}}$$

$$1900. \frac{x}{4} (x^2-2) \sqrt{4-x^2} + 2 \arcsin \frac{x}{2} + C.$$

$$1901. \frac{1}{4\sqrt{15}} \ln \left| \frac{x\sqrt{15} + 2\sqrt{4x^2+1}}{x\sqrt{15} + 2\sqrt{4x^2+1}} \right| + C.$$

$$1902^*. \arccos \frac{1}{x} \frac{\sqrt{x^2-1}}{x} + C. \quad \left( \text{Može se primeniti smena } x = \frac{1}{z} \right).$$

$$1903^*. 2 \arcsin \sqrt{x} + C. \quad \left( \text{Može se primeniti smena } x = \sin^2 z \right).$$

$$1904^*. \ln \left| \frac{xe^x}{1+xe^x} \right| + C. \quad \left( \text{Pomnožiti i brojitelj i imenitelj sa } e^x \text{ i staviti } xe^x = z \right).$$

$$1905. 2e^{\sqrt{x}} (\sqrt{x}-1) + C.$$

$$1906. 3 \left[ (2-\sqrt{x^2}) \cos \sqrt{x} + 2\sqrt{x} \sin \sqrt{x} \right] + C.$$

$$1907. \frac{x \arcsin x}{\sqrt{1-x^2}} + \frac{1}{2} \ln |1-x^2| + C.$$

$$1908. x \operatorname{arctg} x - \frac{1}{2} \ln(1+x^2) - \frac{1}{2} (\operatorname{arctg} x)^2 + C.$$

$$1909. \ln \frac{|x|}{\sqrt{1+x^2}} - \frac{1}{x} \operatorname{arctg} x - \frac{1}{2} (\operatorname{arctg} x)^2 + C.$$

$$1910. \frac{1}{3} \sqrt{(x^2+2x)^3} + C. \quad 1911. \frac{1}{9} (1+e^3 x)^3 + C. \quad 1912. 2e^{\sqrt{x}} + C.$$

$$1913. e^{-\cos x} + C. \quad 1914. C - \frac{2}{3} (1-e^x)^{\frac{3}{2}}. \quad 1915. \frac{1}{2} \sin x^2 + C.$$

$$1916. C - \frac{5}{24} (2 - 3x^{\frac{4}{3}})^{\frac{6}{5}} \quad 1917. C - \frac{1}{3} \ln |1 + 3x^3 - x^6|.$$

$$1918. \frac{2}{3} \ln(1 + x^2) + C \quad 1919. C - \ln(3 + e^{-x}).$$

$$1920. C - \arcsin e^{-x}. \quad 1921. 2\sqrt{1+x^2} + 3 \ln(x + \sqrt{1+x^2}) + C.$$

$$1922. \frac{1}{9} [2\sqrt{9x^2-4} - 3 \ln |3x + \sqrt{9x^2-4}|] + C.$$

$$1923. 2 \sin \sqrt{x} + C. \quad 1924. \arcsin \frac{\ln x}{\sqrt{3}} + C. \quad 1925. C - \frac{1}{2} \ln |1 - \ln^2 x|.$$

$$1926. \frac{1}{\sqrt{x^2+1}} + \ln(x + \sqrt{x^2+1}) + C.$$

$$1927. \frac{(\operatorname{arctg} x)^{n+1}}{n+1} + C, \text{ ako je } n \neq -1, \text{ i } \ln |\operatorname{arctg} x|, \text{ ako je } n = -1.$$

$$1928. C - 2 \operatorname{ctg} 2\varphi. \quad 1929. 2x - \operatorname{tg} x + C. \quad 1930. \frac{1}{5} \operatorname{tg}^5 x + C.$$

$$1931. \frac{2}{45} \sqrt{\operatorname{tg}^5 x (5 \operatorname{tg}^2 x + 9)} + C. \quad 1932. \frac{1}{3} \operatorname{tg} 3x + \ln \cos^2 3x + C.$$

$$1933. \frac{x^3}{3} - \frac{x^2}{2} + x - \ln |x+1| + C. \quad 1934. C - \frac{1}{x-1} - \frac{1}{2(x-1)^2}.$$

$$1935. \frac{\sqrt{2+4x}(x-1)}{6} + C. \quad 1936. x\sqrt{1+2x} - \frac{1}{3} \sqrt{(1+2x)^3} + C.$$

$$1937. \frac{2}{15} (3x-2a)\sqrt{(a+x)^3} + C.$$

$$1938. \frac{x}{2} + \frac{1}{4} \sin 2x + \frac{4}{3} \sqrt{\sin^3 x} - \cos x + C. \quad 1939. \frac{a^{mx} b^{nx}}{m \ln a + n \ln b} + C.$$

$$1940. C - \ln[1 - x + \sqrt{5 - 2x + x^2}].$$

$$1941. \frac{1}{3} \ln(3x-1 + \sqrt{9x^2-6x+2}) + C. \quad 1942. \frac{1}{3} \arcsin \frac{3x-2}{\sqrt{2}} + C.$$

$$1943. C - 8\sqrt{5+2x-x^2} - 3 \arcsin \frac{x-1}{\sqrt{6}}.$$

$$1944. \frac{1}{2} \ln(x^2 + 2x + 2) + \operatorname{arctg}(x+1) + C.$$

$$1945. C - \sqrt{3-2x-x^2} - 4 \arcsin \frac{x+1}{2}.$$

$$1946. \frac{3}{8} \left[ \ln(4x^2 - 4x + 17) + \frac{1}{6} \operatorname{arctg} \frac{2x-1}{4} \right] + C.$$

$$1947. 3\sqrt{x^2+2x+2} - 4 \ln(x+1 + \sqrt{x^2+2x+2}) + C.$$

$$1948. \ln \frac{(x-4)^2}{|x-3|} + C.$$

$$1949. \frac{2}{9} \sqrt{9x^2+6x+2} + \frac{13}{9} \ln(3x+1+\sqrt{9x^2+6x+2}) + C.$$

$$1950. C - \ln|2x^2-3x+1|.$$

$$1951. \frac{29}{45} \operatorname{arctg} \frac{5x+3}{9} - \frac{3}{10} \ln(5x^2+6x+18) + C.$$

$$1952. \frac{61}{16} \ln|8x+9+4\sqrt{4x^2+9x+1}| - \frac{5}{4} \sqrt{4x^2+9x+1} + C.$$

$$1953. \frac{1}{3} \sqrt{3x^2-11x+2} + \frac{11}{6\sqrt{3}} \left| x - \frac{11}{6} + \sqrt{x^2 - \frac{11}{3}x + \frac{2}{3}} \right| + C.$$

$$1954. \frac{1}{2} \sqrt{2x^2+3x} - \frac{3}{4\sqrt{2}} \ln \left( x + \frac{3}{4} + \sqrt{x^2 + \frac{3x}{2}} \right) + C.$$

$$1955. \sqrt{(a-x)(x-b)} - (a-b) \operatorname{arctg} \sqrt{\frac{a-x}{x-b}} + C.$$

$$1956. x \operatorname{arctg} x - \frac{1}{2} \ln(1+x^2) + C. \quad 1957. \frac{1}{8} \sin 2x - \frac{1}{4} x \cos 2x + C.$$

$$1958. \frac{1}{\omega^2} [(\omega^2 x^2 - 2) \sin \omega x + 2 \omega x \cos \omega x] + C.$$

$$1959. e^{2x} \left( \frac{1}{2} x^3 - \frac{3}{4} x^2 + \frac{3}{4} x - \frac{3}{8} \right) + C.$$

$$1960. \operatorname{tg} x \cdot \ln(\cos x) + \operatorname{tg} x - x + C. \quad 1961. \ln|\ln \sin x| + C.$$

$$1962. \frac{1}{4} \left[ \ln(1+x^4) + \frac{1}{1+x^4} \right] + C.$$

$$1963. \frac{1}{3} \left( \ln \left| \operatorname{tg} \frac{3x}{2} \right| + \cos 3x \right) + C. \quad 1964. \frac{1}{3} \operatorname{tg} \left( \frac{\pi}{4} + \frac{3x}{2} \right) + C.$$

$$1965. C - \frac{1}{8} \ln \frac{2+\cos 2x}{2-\cos 2x}. \quad 1966. \ln \frac{e^x}{e^x+1} + C.$$

$$1967. 2 \ln(e^{\frac{x}{2}} + e^{-\frac{x}{2}}) + C. \quad 1968. e^{e^x} + C. \quad 1969. \frac{1}{4} e^{2x^2} + C.$$

$$1970. \frac{1}{\sqrt{2}} \left[ 3 \ln(x + \sqrt{1+x^2}) + \frac{1}{3} (x^2-2) \sqrt{1+x^2} \right] + C.$$

$$1971. x - \sqrt{1-x^2} \arcsin x + C. \quad 1972. C - \frac{1}{2} \left( \frac{x}{\sin^2 x} + \operatorname{ctg} x \right).$$

$$1973. \frac{e^x}{2} \left( 1 - \frac{2 \sin 2x + \cos 2x}{5} \right) + C. \quad 1974. \frac{1}{2} (\operatorname{tg} x + \ln|\operatorname{tg} x|) + C.$$

$$1975. \ln|\sin x + \cos x| + C. \quad 1976. \frac{1}{2} \ln \left| \operatorname{tg} \left( \frac{\varphi}{2} + \frac{\pi}{6} \right) \right| + C.$$

$$1977. \sec x - \operatorname{tg} x + x + C. \quad 1978. \sin x - \operatorname{arctg} \sin x + C.$$

$$1979. \sqrt{2} \ln \left| \operatorname{tg} \frac{x}{4} \right| + C. \quad 1980. \ln x \cdot \ln \ln x - \ln x + C.$$

$$1981. \frac{e^{x^2}(x^2-1)}{2} + C. \quad 1982. C - \frac{1}{2} e^{-x^2}(x^4 + 2x^2 + 2).$$

$$1983. \frac{1}{6}(x^2-1)\sqrt{1+2x^2} + C. \quad 1984. C - \frac{x(x^2-3)}{2\sqrt{1-x^2}} - \frac{3}{2} \arcsin x.$$

$$1985. \frac{1}{5} \sqrt{(x^2-a^2)^3} - \frac{a^2}{3} \sqrt{(x^2-a^2)^3} + a^4 \sqrt{x^2-a^2} + a^5 \arcsin \frac{a}{x} + C.$$

$$1986. \frac{\sqrt{4+x^2}(x^2-2)}{24x^3} + C. \quad 1987. \frac{\sqrt{(x^2-8)^3}}{24x^3} + C.$$

$$1988. \frac{\sqrt{(4+x^2)^3}(x^2-6)}{120x^5} + C. \quad 1989. \frac{\sqrt{x^2-3}(2x^2+3)}{27x^3} + C.$$

$$1990. \frac{4}{3} \left[ \sqrt[4]{x^3} - \ln \left( \sqrt[4]{x^3} + 1 \right) \right] + C.$$

$$1991. x + 4\sqrt{x+1} + 4 \ln(\sqrt{1+x}-1) + C. \quad 1992. 2 \operatorname{arctg} \sqrt{1+x} + C.$$

$$1993. \ln \frac{x}{\left( \sqrt[6]{x+1} \right)^6} + C. \quad 1994. \sqrt{x^2+2x} + \ln |x+1 + \sqrt{x^2+2x}| + C.$$

$$1995^*. \frac{x^3}{8(1-x^2)^4} + C. \quad (\text{Podesna je smena } x = \sin u.)$$

$$1996. \frac{2}{\sqrt{ab}} \operatorname{arctg} \sqrt{\frac{ax}{b}} + C. \quad 1997. C - \frac{(1+x^4)^{\frac{3}{2}}}{12x^{12}}.$$

$$1998. \frac{x^2}{2\sqrt{1-x^4}} + C. \quad 1999. \frac{1}{4} x^2 \sqrt{x^4+4} - \ln(x^2 + \sqrt{x^4+4}) + C.$$

$$2000. \ln \left| \frac{\sqrt{x-1}}{\sqrt{x+1}} \right| + C. \quad 2001. C - \frac{2}{3} \sqrt{\frac{1-x^3}{x^3}} - \frac{2}{3} \arcsin \sqrt{x^3}.$$

$$2002. C - \frac{x^3}{4(1+x^2)^2} - \frac{3x}{8(1+x^2)} + \frac{3 \operatorname{arctg} x}{8}.$$

$$2003. \frac{(x^2+1) \operatorname{arctg} x}{\sqrt{x}} - 2\sqrt{x} + C. \quad 2004. \arcsin e^x - \sqrt{1-e^{2x}} + C.$$

$$2005. 2\sqrt{e^x-1} - 2 \operatorname{arctg} \sqrt{e^x-1} + C. \quad 2006^*. C - \frac{1}{2} \ln^2 \left( 1 + \frac{1}{x} \right) \cdot \left( \text{Smena } u = 1 + \frac{1}{x} \right).$$

$$2007. \operatorname{arctg} x + \frac{1}{x} - \frac{1}{3x^3} + C.$$

$$2008. x \arccos \sqrt{\frac{x}{x+1}} + \sqrt{x} - \operatorname{arctg} \sqrt{x} + C.$$

$$2009. x \ln(x + \sqrt{1+x^2}) - \sqrt{1+x^2} + C.$$

$$2010. \frac{3}{55} \sqrt[5]{\operatorname{tg}^5 x (5 \operatorname{tg}^2 x + 11)} + C.$$

$$2011. \frac{\sqrt{2}}{5} (\operatorname{tg}^2 x + 5) \sqrt{\operatorname{tg} x} + C. \quad 2012. \ln \frac{|x+1|}{\sqrt{2x+1}} + C.$$

$$2013. \frac{1}{5} \ln [(x-2)^2 \sqrt{2x+1}] + C. \quad 2014. \ln \left| \frac{(x-1)^4 (x-4)^2}{(x+3)^7} \right| + C.$$

$$2015. \frac{3}{11} \ln |3x+1| + \frac{2}{33} \ln |2x-3| - \frac{1}{3} \ln |x| + C.$$

$$2016. \frac{x^3}{3} + \frac{x^2}{2} + 4x + \ln \left| \frac{x^2(x-2)^3}{(x+2)^3} \right| + C.$$

$$2017. \frac{1}{4} x + \ln |x| - \frac{7}{16} \ln |2x-1| - \frac{9}{16} \ln |2x+1| + C.$$

$$2018. \ln |2x-1| - 6 \ln |2x-3| + 5 \ln |2x-5| + C.$$

$$2019. \ln \sqrt{\frac{x^2-2}{x^2-1}} + C.$$

$$2020. \frac{1}{2\sqrt{2}} \ln \left| \frac{x-\sqrt{2}}{x+\sqrt{2}} \right| + \frac{1}{2\sqrt{3}} \ln \left| \frac{x-\sqrt{3}}{x+\sqrt{3}} \right| + C.$$

$$2021. \frac{x^2}{2} + \ln \left| \frac{x(x-2)\sqrt{(x-1)(x+1)^3}}{x+2} \right| + C.$$

$$2022. \ln \left| \frac{x^2}{x+1} \right| + \frac{6}{x+1} + C.$$

$$2023. 4 \ln |x| - 3 \ln |x-1| - \frac{9}{x-1} + C.$$

$$2024. \frac{4}{x+2} + \ln |x+1| + C. \quad 2025. x + \frac{1}{x} + \ln \frac{(x-1)^2}{|x|} + C.$$

$$2026. C - \frac{1}{3(x-2)^3} + \frac{1}{2(x-2)^2} + \ln |x-2|.$$

$$2027. \frac{1}{x} + \frac{1}{2} \ln \left| \frac{x-1}{x+1} \right| + C. \quad 2028. 2 \ln \left| \frac{x+4}{x+2} \right| - \frac{5x+12}{x^2+6x+8} + C.$$

$$2029. \frac{3}{2(x-2)^2} + \ln |x-5| + C.$$

$$2030. \frac{x}{8} - \ln |x+1| - \frac{9x^2+12x+5}{3(x+1)^3} + C.$$

$$2031. \frac{(x+2)^2}{2} - \frac{1}{4(x-1)^2} - \frac{9}{4(x-1)} + \frac{31}{8} \ln |x-1| + \frac{1}{8} \ln |x+1| + C.$$

$$2032. \frac{1}{x-1} + \ln \frac{\sqrt{(x-1)(x-3)}}{|x|} + C.$$

$$2033. \frac{3}{2x} - \frac{5}{4} \ln|x| + 20 \ln|x-3| - \frac{47}{4} \ln|x-2| + C.$$

$$2034. \frac{1}{4} \ln \left| \frac{x}{x-2} \right| - \frac{1}{x} \left( 1 + \frac{1}{2x} \right) - \frac{1}{2(x-2)} + C.$$

$$2035. C - \frac{x}{(x^2-1)^2}. \quad 2036. \ln \frac{|x|}{\sqrt{x^2+1}} + C.$$

$$2037. \frac{1}{6} \ln \frac{(x+1)^2}{x^2-x+1} + \frac{1}{\sqrt{3}} \operatorname{arctg} \frac{2x-1}{\sqrt{3}} + C.$$

$$2038. \frac{1}{3} \ln \frac{|x-1|}{\sqrt{x^2+x+1}} + \frac{1}{\sqrt{3}} \operatorname{arctg} \frac{2x+1}{\sqrt{3}} + C.$$

$$2039. \ln \frac{\sqrt{(x^2-2x+5)^3}}{|x-1|} + \frac{1}{2} \operatorname{arctg} \frac{x-1}{2} + C.$$

$$2040. \frac{(x+1)^2}{2} + \ln \frac{|x-1|}{\sqrt{x^2+1}} - \operatorname{arctg} x + C.$$

$$2041. \frac{1}{4} \ln \left| \frac{1+x}{1-x} \right| - \frac{1}{2} \operatorname{arctg} x + C.$$

$$2042. \frac{1}{4} \ln \frac{x^4}{(x+1)^2(x^2+1)} - \frac{1}{2} \operatorname{arctg} x + C.$$

$$2043. \frac{1}{2} \ln|x+1| - \frac{1}{4} \ln(x^2+1) - \frac{1}{2(x+1)} + C.$$

$$2044. \frac{1}{4} \left[ \ln \frac{\sqrt{x^2+1}}{|x-1|} + \operatorname{arctg} x - \frac{7}{(x-1)^2} \right] + C.$$

$$2045. \frac{x^2}{2} - 2x - \frac{2}{x} + 2 \ln(x^2+2x+2) - 2 \operatorname{arctg}(x+1) + C.$$

$$2046. \ln \frac{x^2+4}{\sqrt{x^2+2}} + \frac{3}{2} \operatorname{arctg} \frac{x}{2} - \frac{3\sqrt{2}}{2} \operatorname{arctg} \frac{x\sqrt{2}}{2} + C.$$

$$2047^*. \frac{1}{4\sqrt{2}} \ln \frac{x^2+x\sqrt{2}+1}{x^2-x\sqrt{2}+1} + \frac{\sqrt{2}}{4} \operatorname{arctg} \frac{x\sqrt{2}}{1-x^2} + C. \text{ (U imenitelju podintegralnog izraza}$$

dati i oduzeti  $2x^2$ ).

$$2048. \frac{2-x}{4(x^2+2)} + \frac{\ln(x^2+2)}{2} - \frac{1}{4\sqrt{2}} \operatorname{arctg} \frac{x}{\sqrt{2}} + C.$$

$$2049. \frac{1}{16} \ln|x| - \frac{1}{18} \ln(x^2+1) + \frac{7}{288} \ln(x^2+4) - \frac{1}{24(x^2+4)} + C.$$

$$2050. \frac{13x-159}{8(x^2-6x+13)} + \frac{53}{16} \operatorname{arctg} \frac{x-3}{2} + C.$$

$$2051. \frac{3}{8} \operatorname{arctg}(x+1) - \frac{5x^3+15x^2+18x+8}{8(x^2+2x+2)^2} + C.$$

$$2052. \frac{x}{216(x^2+9)} + \frac{x}{36(x^2+9)^2} + \frac{1}{648} \operatorname{arctg} \frac{x}{3} + C.$$

$$2053. \frac{x-1}{2(x^2+1)} - \frac{1}{2} \ln|x+1| + \frac{1}{4} \ln(1+x^2) + C.$$

$$2054. \frac{15x^3+40x^2+33x}{48(1+x^2)^2} + \frac{15}{48} \operatorname{arctg} x + C.$$

$$2055. \frac{1}{4} \left( \frac{2x^2-3x^2}{x^2-1} + \frac{3}{2} \ln \left| \frac{x^2-1}{x^2+1} \right| \right) + C.$$

$$2056. \frac{x}{x^2+x+1} + \frac{2}{\sqrt{3}} \operatorname{arctg} \frac{2x+1}{\sqrt{3}} - 2 \ln(x^2+x+1) + \frac{x}{4} - \frac{2x^2}{3} + \frac{x^2}{2} + 2x + C$$

$$2057. \frac{3x^2-x}{(x-1)(x^2+1)} + \ln \frac{(x-1)^2}{x^2+1} + \operatorname{arctg} x + C.$$

$$2058. C - 6 \ln \left| \frac{x-1}{x} \right| - \frac{12x^2-5x-1}{2(x^3-x^2)}.$$

$$2059. \frac{1}{x^2(x^2+1)} + \ln \sqrt{x^2+1} + C.$$

$$2060. \frac{1}{2} \cdot \frac{1+x}{(1+x^2)^2} + \frac{1}{4} \cdot \frac{x-2}{x^2+1} + \frac{1}{4} \operatorname{arctg} x + C.$$

$$2061. \frac{2}{3} \ln \left| \frac{x^3+1}{x^3} \right| - \frac{1}{3x^3} - \frac{1}{3(x^3+1)} + C.$$

$$2062. \frac{1}{648} \left[ \operatorname{arctg} \frac{x+1}{2} + \frac{3(x+1)}{x^2+2x+10} + \frac{18(x+1)}{(x^2+2x+10)^2} \right] + C.$$

$$2063. \frac{3}{8} \operatorname{arctg}(x+1) + \frac{3}{8} \cdot \frac{x+1}{x^2+2x+2} + \frac{x}{4(x^2+2x+2)^2} + C.$$

$$2064. C - \frac{x}{8(x^2+4)} - \frac{2x+5}{2(x^2+4x+5)} - \frac{1}{16} \operatorname{arctg} \frac{x}{2} - \operatorname{arctg}(x+2).$$

$$2065. C - \frac{57x^4+103x^2+32}{8x(x^2+1)^2} - \frac{57}{8} \operatorname{arctg} x.$$

$$2066. \frac{3-7x-2x^2}{2(x^3-x^2-x+1)} + \ln \left| \frac{x-1}{(x+1)^2} \right| + C.$$

$$2067. \left( -\frac{1}{2}x^4 + \frac{5}{4}x^2 - \frac{3}{5} \right) \frac{1}{x(3-2x^2)^2} + \frac{1}{8\sqrt{6}} \ln \left| \frac{\sqrt{3+x}\sqrt{2}}{\sqrt{3-x}\sqrt{2}} \right| + C.$$

$$2068. \ln \frac{x}{(1+\sqrt{x})^{10}} + \frac{10}{10} \frac{5}{\sqrt{x}} + \frac{10}{3\sqrt{x^3}} - \frac{5}{2\sqrt{x^5}} + C.$$

$$2069. 2\sqrt{x} - 3\sqrt[3]{x} + 8\sqrt[4]{x} + 6\sqrt[6]{x} + 48\sqrt[12]{x} + 3 \ln(1+\sqrt{x}) + \\ + \frac{33}{2} \ln(\sqrt{x} - \sqrt[6]{x} + 2) - \frac{171}{\sqrt{7}} \operatorname{arctg} \frac{2\sqrt{x}-1}{\sqrt{7}} + C.$$



$$2070. 6 \left[ \frac{1}{9} (x+1)^{\frac{3}{2}} - \frac{1}{8} (x+1)^{\frac{4}{3}} + \frac{1}{7} (x+1)^{\frac{7}{6}} - \frac{1}{6} (x+1) + \frac{1}{5} (x+1)^{\frac{5}{6}} - \frac{1}{4} (x+1)^{\frac{2}{3}} \right] + C.$$

$$2071. \ln \left| \frac{\sqrt{1+x} - \sqrt{1-x}}{\sqrt{1+x} + \sqrt{1-x}} \right| + 2 \operatorname{arctg} \sqrt{\frac{1-x}{1+x}} + C.$$

$$2072. (\sqrt{x}-2) \sqrt{1-x} - \arcsin \sqrt{x} + C.$$

$$2073. 6 \sqrt[3]{(1+x)^2} \left[ \frac{(1+x)^2}{16} - \frac{1+x}{5} + \frac{\sqrt{1+x}}{7} + \frac{1}{4} \right] + C.$$

$$2074. \ln \frac{|u^2-1|}{\sqrt{u^4+u^2+1}} + \sqrt{3} \operatorname{arctg} \frac{1+2u^2}{\sqrt{3}} + C, \text{ gde } u = \sqrt[3]{\frac{1-x}{1+x}}.$$

$$2075^*. \frac{4}{3} \sqrt[4]{\frac{x-1}{x+2}} + C. \text{ Pomnožiti i brojilac i imenilac razlomka sa } \sqrt[4]{x-1} \text{ i izneti}$$

ispred korena množitelje koji to dopuštaju..

$$2076. \frac{2}{3} x \sqrt{x} + \frac{24}{11} x \sqrt{x^3} + \frac{36}{13} x^2 \sqrt{x} + \frac{8}{5} x^2 \sqrt{x} + \frac{6}{17} x^2 \sqrt{x^3} + C.$$

$$2077. 3 \left[ \ln \left| \frac{\sqrt[3]{x}}{1+\sqrt[3]{x}} \right| + \frac{2\sqrt[3]{x+3}}{2(1+\sqrt[3]{x})^2} \right] + C.$$

$$2078. \frac{1}{2} \ln (\sqrt[3]{x^2+1}-1) - \frac{1}{4} \ln [\sqrt[3]{(x^2+1)^2} + \sqrt[3]{x^2+1} + 1] + \frac{\sqrt{3}}{2} \operatorname{arctg} \frac{2\sqrt[3]{x^2+1}+1}{\sqrt{3}} + C.$$

$$2079. \frac{1}{8} \sqrt[3]{(1+x^3)^2} - \frac{1}{5} \sqrt[3]{(1+x^3)^3} + C.$$

$$2080. \frac{1}{6} \ln \frac{u^2+u+1}{(u-1)^2} - \frac{1}{\sqrt{3}} \operatorname{arctg} \frac{2u+1}{\sqrt{3}} + C, \text{ gde } u = \frac{\sqrt{x^2+1}}{x}.$$

$$2081. \frac{1}{4} \ln \frac{\sqrt[4]{1+x^4}+x}{\sqrt[4]{1+x^4}-x} - \frac{1}{2} \operatorname{arctg} \frac{\sqrt[4]{1+x^4}}{x} + C.$$

$$2082. \frac{1}{4} \ln \frac{\sqrt[4]{1-x^4}+1}{x^2} - \frac{1}{4} \frac{\sqrt{1-x^4}}{x^4} + C.$$

$$2083. \frac{3}{7} (4\sqrt{x} + \sqrt[4]{x}-3) \sqrt{1+\sqrt{x}} + C.$$

$$2084. 6u + 2 \ln \frac{u-1}{\sqrt{u^2+u+1}} - 2\sqrt{3} \operatorname{arctg} \frac{2u+1}{\sqrt{3}} + C, \text{ gde } u = \sqrt[3]{1+\sqrt{x^2}}.$$

$$2085. \frac{1}{5} \ln \frac{|u-1|}{\sqrt{u^2+u+1}} + \frac{\sqrt{3}}{5} \operatorname{arctg} \frac{1+2u}{\sqrt{3}} + C, \text{ gde } u = \sqrt[3]{1+x^2}.$$

$$2086. C - \frac{\sqrt[3]{1+x^2}}{x} + \frac{1}{\sqrt{3}} \operatorname{arctg} \frac{2\sqrt[3]{1+x^2}+x}{x\sqrt{3}} -$$

$$-\frac{1}{3} \ln \left| \frac{\sqrt[3]{1+x^2}-x}{\sqrt{\sqrt[3]{(1+x^2)^2}+x}\sqrt[3]{1+x^2}+x^2} \right|.$$

$$2087. C - \frac{1}{10} \sqrt{\left(\frac{1+x^4}{x^4}\right)^5} + \frac{1}{3} \sqrt{\left(\frac{1+x^4}{x^4}\right)^3} - \frac{1}{2} \sqrt{\frac{1+x^4}{x^4}}.$$

$$2088. \frac{u}{2(u^3+1)} - \frac{1}{6} \ln \frac{u+1}{\sqrt{u^2-u+1}} - \frac{1}{2\sqrt{3}} \operatorname{arctg} \frac{2u-1}{2\sqrt{3}} + C, \text{ gde je } u = \sqrt[3]{\frac{1-x^2}{x^2}}.$$

$$2089. 12 \left[ \frac{\sqrt[3]{u^{13}}}{13} - \frac{3\sqrt[3]{u^{10}}}{10} + \frac{3\sqrt[3]{u^7}}{7} - \frac{\sqrt[3]{u^4}}{4} \right] + C, \text{ gde } u = \sqrt[4]{x}.$$

$$2090. \frac{1}{15} \cos^3 x (3 \cos^2 x - 5) + C. \quad 2091. \frac{1}{3 \cos^3 x} - \frac{1}{\cos x} + C.$$

$$2092. \ln |\operatorname{tg} x| - \frac{1}{2 \sin^2 x} + C. \quad 2093. \operatorname{tg} x + \frac{1}{4} \sin 2x - \frac{3}{2} x + C.$$

$$2094. \frac{1}{2} (\operatorname{tg}^2 x - \operatorname{ctg}^2 x) + 2 \ln |\operatorname{tg} x| + C.$$

$$2095. \frac{(\operatorname{tg}^2 x - 1)(\operatorname{tg}^4 x + 10 \operatorname{tg}^2 x + 1)}{3 \operatorname{tg}^3 x} + C. \quad 2096. \frac{1}{\cos x - 1} + C.$$

$$2097. \frac{1}{2} \operatorname{ctg} \frac{x}{2} - \frac{1}{6} \operatorname{ctg}^3 \frac{x}{2} + C.$$

$$2098. \frac{5}{16} x + \frac{1}{12} \sin 2x \left( \cos^4 x + \frac{5}{4} \cos^2 x + \frac{15}{8} \right) + C.$$

$$2099. x - \frac{1}{3} \operatorname{ctg}^3 x + \operatorname{ctg} x + C. \quad 2100. \frac{1}{4} \operatorname{tg}^4 x - \frac{1}{2} \operatorname{tg}^2 x - \ln |\cos x| + C.$$

$$2101. x - \frac{1}{7} \operatorname{ctg}^7 x + \frac{1}{5} \operatorname{ctg}^5 x - \frac{1}{3} \operatorname{ctg}^3 x + \operatorname{ctg} x + C.$$

$$2102. C - \frac{\cos x}{2 \sin^2 x} + \frac{1}{2} \ln \left| \operatorname{tg} \frac{x}{2} \right|.$$

$$2103. \frac{1}{4} \ln \left| \frac{1+\operatorname{tg} x}{1-\operatorname{tg} x} \right| + \frac{1}{2} \sin x \cos x + C.$$

$$2104. C - \frac{1}{1+\operatorname{tg} x}. \quad 2105. \frac{\sqrt{2}}{2} \ln \left| \operatorname{tg} \left( \frac{\pi}{8} + \frac{x}{2} \right) \right| + C.$$

$$2106. \frac{1}{\sqrt{a^2+b^2}} \ln \left| \operatorname{tg} \frac{x + \operatorname{arctg} \frac{a}{b}}{2} \right| + C.$$

$$2107. \ln \frac{|C \cdot \sin x|}{\sqrt{\cos 2x}}. \quad 2108. \ln \frac{|C \cdot \sin x|}{\sqrt{1-4 \sin^2 x}}.$$

$$2109. \frac{1}{2} [x + \ln |\sin x + \cos x|] + C. \quad 2110. \frac{1}{2} \operatorname{arctg} \left( 2 \operatorname{tg} \frac{x}{2} \right) + C.$$

$$2111. \frac{2}{3} \operatorname{arctg} \frac{5 \operatorname{tg} \frac{x}{2} + 4}{3} + C.$$

$$2112. \ln(2 + \cos x) + \frac{4}{\sqrt{3}} \operatorname{arctg} \left( \frac{1}{\sqrt{3}} \operatorname{tg} \frac{x}{2} \right) + C.$$

$$2113. \frac{\cos x (\cos x - \sin x)}{4} - \frac{1}{4} \ln |\cos x - \sin x| + C.$$

$$2114. \frac{4}{25} x - \frac{3}{25} \ln |\operatorname{tg} x + 2| + \frac{2}{5(\operatorname{tg} x + 2)} - \frac{3}{25} \ln |\cos x| + C.$$

$$2115. \frac{\cos 2x - 15}{15(4 + \sin 2x)} + \frac{4}{15\sqrt{15}} \operatorname{arcsin} \frac{4 \sin 2x + 1}{4 + \sin 2x} + C.$$

$$2116. \frac{1}{2 - \operatorname{tg} \frac{x}{2}} + C. \quad 2117. \frac{1}{3} \operatorname{arctg}(3 \operatorname{tg} x) + C.$$

$$2118. \frac{1}{\sqrt{2}} \operatorname{arctg}(\sqrt{2} \operatorname{tg} x) + C.$$

$$2119. \frac{1}{2} \operatorname{tg} x + \frac{1}{2\sqrt{2}} \operatorname{arctg}(\sqrt{2} \operatorname{tg} x) + C. \quad 2120. \frac{1}{ab} \operatorname{arctg} \frac{a \operatorname{tg} x}{b} + C.$$

$$2121. C - \frac{1}{2} \left[ \operatorname{ctg} x + \frac{1}{\sqrt{2}} \operatorname{arctg} \left( \frac{\operatorname{tg} x}{\sqrt{2}} \right) \right].$$

$$2122. \ln \frac{\left| \sqrt{\operatorname{tg} x - 1} \right|}{\sqrt{\operatorname{tg} x + \operatorname{tg} x + 1}} - \frac{\sqrt{3}}{3} \operatorname{arctg} \frac{2 \operatorname{tg} x + 1}{\sqrt{3}} + C.$$

$$2123. 2 \left( \sin \frac{x}{2} - \cos \frac{x}{2} \right) + C \text{ za one vrednosti } x \text{ za koje je } \sin \frac{x}{2} + \cos \frac{x}{2} > 0$$

$$\text{ i } -2 \left( \cos \frac{x}{2} - \cos \frac{x}{2} \right) + C \text{ za one vrednosti } x \text{ za koje je: } \sin \frac{x}{2} + \cos \frac{x}{2} < 0.$$

$$2124. 2\sqrt{\operatorname{tg} x} + C. \quad 2125^*. C - \frac{4\sqrt{2}}{5} \sqrt{\operatorname{ctg}^5 x}. \text{ (Staviti } u = \operatorname{ctg} x \text{).}$$

$$2126. 4 \sqrt[4]{\operatorname{tg} x} + C. \quad 2127. \frac{1}{\sqrt{2}} \ln (\sqrt{2} \operatorname{tg} x + \sqrt{1+2 \operatorname{tg}^2 x}) + C.$$

$$2128. 2 \arcsin \sqrt{\sin x} + C. \quad 2129. C - \frac{1}{3} \operatorname{tg} x (2 + \operatorname{tg}^2 x) \sqrt{4 - \operatorname{ctg}^2 x}.$$

$$2130. \frac{4}{\sqrt{\cos \frac{x}{2}}} + 2 \operatorname{arctg} \sqrt{\cos \frac{x}{2}} - \ln \frac{1 + \sqrt{\cos \frac{x}{2}}}{1 - \sqrt{\cos \frac{x}{2}}} + C.$$

$$2131. \frac{1}{\sqrt{2}} [\ln (\sin x + \cos x - \sqrt{\sin 2x}) + \arcsin (\sin x - \cos x)] + C.$$

$$2132. \operatorname{sh} x + C. \quad 2133. \operatorname{ch} x + C. \quad 2134. \operatorname{th} x + C. \quad 2135. x + C.$$

$$2136. \frac{1}{2a} \operatorname{sh} 2ax + C. \quad 2137. \frac{\operatorname{sh} x \cdot \operatorname{ch} x - x}{2} + C. \quad 2138. x - \operatorname{th} x + C.$$

$$2139. x - \operatorname{cth} x + C. \quad 2140. \frac{1}{3} \operatorname{ch}^3 x - \operatorname{ch} x + C.$$

$$2141. \operatorname{sh} x + \frac{1}{3} \operatorname{sh}^3 x + C. \quad 2142. x - \operatorname{th} x - \frac{1}{3} \operatorname{th}^3 x + C.$$

$$2143. \frac{1}{3} \operatorname{sh}^3 x + \frac{1}{5} \operatorname{sh}^5 x + C. \quad 2144. \ln |\operatorname{sh} x| - \frac{1}{2} \operatorname{cth}^2 x - \frac{1}{4} \operatorname{cth}^4 x + C.$$

$$2145. \ln |\operatorname{th} x| + C. \quad 2146. \ln \left| \operatorname{th} \frac{x}{2} \right| + C.$$

$$2147. \frac{1}{2} \operatorname{th} \frac{x}{2} - \frac{1}{6} \operatorname{th}^3 \frac{x}{2} + C. \quad 2148. \frac{1}{2} \ln \frac{1 + \sqrt{\operatorname{th} x}}{|1 - \sqrt{\operatorname{th} x}|} - \operatorname{arctg} \sqrt{\operatorname{th} x} + C.$$

$$2149. x \operatorname{th} x - \ln \operatorname{ch} x + C. \quad 2150. C - \frac{e^{3x}}{3 \operatorname{sh}^3 x}.$$

$$2151^*. \ln \frac{|\operatorname{ch}|}{2+x+2\sqrt{x^2+x+1}}. \quad \left( \text{Može se primeniti smena, recimo } x = \frac{1}{z} \right)$$

$$2152. \frac{1}{2} \arccos \frac{2-x}{x\sqrt{2}} + C. \quad 2153. \arcsin \frac{x-1}{x\sqrt{2}} + C.$$

$$2154. C - \frac{1}{\sqrt{2}} \ln \left| \frac{\sqrt{2+x-x^2} + \sqrt{2}}{x} + \frac{1}{2\sqrt{2}} \right|.$$

$$2155. \ln |x+1+\sqrt{2x+x^2}| - \frac{4}{x+\sqrt{2x+x^2}} + C.$$

$$2156. C - \frac{1}{\sqrt{3}} \ln \left| \frac{3+3x+2\sqrt{3(x^2+x+1)}}{x-1} \right|.$$

$$2157. C - \frac{1}{\sqrt{15}} \ln \left| \frac{x+6+\sqrt{60x-15x^2}}{2x-3} \right|.$$

2158.  $\frac{1}{2} (x-1) \sqrt{x^2-2x-1} - \ln |x-1 + \sqrt{x^2-2x-1}| + C.$
2159.  $\frac{1}{2} \left( x - \frac{1}{2} \right) \sqrt{3x^2-3x+1} + \frac{1}{8\sqrt{3}} \ln \left| \sqrt{3x^2-3x+1} + \frac{\sqrt{3}}{2} (2x-1) \right| + C.$
2160.  $\frac{1}{2} \left[ (x+2) \sqrt{1-4x-x^2} + 5 \arcsin \frac{x+2}{\sqrt{5}} \right] + C.$
2161.  $C - \frac{3}{2(2x-1-2\sqrt{x^2-x+1})} - \frac{3}{2} \ln |2x-1-2\sqrt{x^2-x+1}| + 2 \ln |x-\sqrt{x^2-x+1}|.$
2162.  $\ln \left| \frac{x + \sqrt{x^2+1}}{x} \right| - \frac{\sqrt{1+x^2}}{x} + C.$
2163.  $\frac{1-\sqrt{x^2+2x+2}}{x+1} + \ln(x+1 + \sqrt{x^2+2x+2}) + C.$
2164.  $\frac{1}{2} (3-x) \sqrt{1-2x-x^2} + 2 \arcsin \frac{x+1}{\sqrt{2}} + C.$
2165.  $x\sqrt{x^2-2x+5} - 5 \ln(x-1 + \sqrt{x^2-2x+5}) + C.$
2166.  $C - \frac{1}{2} (3x-19) \sqrt{3-2x-x^2} + 14 \arcsin \frac{x+1}{2}.$
2167.  $(x^2-5x+20) \sqrt{x^2+4x+5} - 15 \ln(x+2 + \sqrt{x^2+4x+5}) + C.$
2168.  $\left( \frac{1}{3} x^2 - \frac{5}{6} x + \frac{1}{6} \right) \sqrt{x^2+2x+2} + \frac{5}{2} \ln(x+1 + \sqrt{x^2+2x+2}) + C.$
2169.  $(x^2+5x+36) \sqrt{x^2-4x-7} + 112 \ln |x-2 + \sqrt{x^2-4x-7}| + C.$
2170.  $\left( \frac{1}{4} x^3 - \frac{7}{6} x^2 + \frac{95}{24} x - \frac{145}{12} \right) \sqrt{x^2+4x+5} + \frac{35}{8} \ln(x+2 + \sqrt{x^2+4x+5}) + C.$
2171.  $\frac{\sqrt{x^2+2x-3}}{8(x+1)^2} + \frac{1}{16} \arccos \frac{2}{x+1} + C.$
2172.  $\frac{1}{2\sqrt{2}} \ln \frac{\sqrt{2+2x^2}-x}{\sqrt{2+2x^2}+x} + \ln(x + \sqrt{x^2+1}) + C.$
2173.  $\frac{\sqrt{2x^2-2x+1}}{x} + C.$
2174.  $\ln \frac{\sqrt{x^2+2x+4}-1}{\sqrt{x^2+2x+4}+1} - \frac{1}{\sqrt{2}} \operatorname{arctg} \frac{\sqrt{2(x^2+2x+4)}}{x+1} + C.$
2175.  $C - \frac{1}{8(x-1)^8} - \frac{1}{3(x-1)^9} - \frac{3}{10(x-1)^{10}} - \frac{1}{11(x-1)^{11}}.$
2176.  $\frac{1}{3} [x^3 + \sqrt{(x^2-1)^3}] + C.$       2177.  $\frac{3(4x-3a) \sqrt[3]{(a+x)^4}}{28} + C.$

$$2178. \frac{1}{m\sqrt{ab}} \operatorname{arctg} \left( e^{mx} \sqrt{\frac{a}{b}} \right) + C.$$

$$2179. \frac{1}{2} \arcsin x - \frac{x+2}{2} \sqrt{1-x^2} + C.$$

$$2180. \frac{x^2}{2} - 2x + \frac{1}{6} \ln \frac{|x-1|(x+2)^2}{|x+1|^3} + C.$$

$$2181. \frac{1}{4} \ln \left| \frac{1+x}{1-x} \right| + \frac{1}{2} \operatorname{arctg} x + C.$$

$$2182. \frac{3}{8} \operatorname{arctg} x - \frac{3}{4(x^2-1)} - \frac{3}{16} \ln \left| \frac{x-1}{x+1} \right| + C.$$

$$2183. 2\sqrt{x+1} [\ln|x+1| - 2] + C.$$

$$2184. \left( \frac{1}{2}x + \frac{3}{4} \right) \cos 2x + \left( \frac{1}{2}x^2 + \frac{3}{4}x + \frac{9}{4} \right) \sin 2x + C.$$

$$2185. x^2 \operatorname{ch} x - 2x \operatorname{sh} x + 2 \operatorname{ch} x + C.$$

$$2186. x \operatorname{arctg} (1 + \sqrt{x}) - \sqrt{x} + \ln |x + 2\sqrt{x} + 2| + C.$$

$$2187. \ln \left| \frac{1 - \sqrt{1-x^2}}{x} \right| - \frac{\arcsin x}{x} + C.$$

$$2188. 3e^{\sqrt{x}} (\sqrt{x^3} - 2\sqrt{x} + 2) + C.$$

$$2189. 3e^{\sqrt{x}} [\sqrt{x^3} - 5\sqrt{x^2} + 20x - 60\sqrt{x} + 120 - 120] + C.$$

$$2190. e^{2x} \left( \frac{1}{x} x^2 - x^2 + \frac{2}{3}x + \frac{13}{9} \right) + C.$$

$$2191. 2(\sin \sqrt{x} - \sqrt{x} \cos \sqrt{x}) + C.$$

$$2192. \frac{\sqrt{x-1}(3x+2)}{4x^2} + \frac{3}{4} \operatorname{arctg} \sqrt{x-1} + C.$$

$$2193. \frac{x^2}{2} + \frac{x}{2} \sqrt{x^2-1} - \frac{1}{2} \ln |x + \sqrt{x^2-1}| + C.$$

$$2194. \ln(x + \sqrt{1+x^2}) - \frac{\sqrt{(1+x^2)^3}}{5x^2} - \frac{\sqrt{(1+x^2)^3}}{3x^2} - \frac{\sqrt{1+x^2}}{x} + C.$$

$$2195. \left( \frac{1}{4}x^2 - \frac{3}{8}x \right) \sqrt{x^2+1} + \frac{3}{8} \ln(x + \sqrt{x^2+1}) + C.$$

$$2196. 3[\ln|u| - \ln(1 + \sqrt{1-u^2}) - \arcsin u] + C, \text{ gde je } u = \sqrt{x}.$$

$$2197. \frac{15x^2 + 5x - 2}{4x^2 \sqrt{1+x}} + \frac{15}{8} \ln \left| \frac{\sqrt{1+x} - 1}{\sqrt{1+x} + 1} \right| + C.$$

$$2198. C - \frac{\sqrt{2x+1}}{x} + \ln \left| \frac{\sqrt{2x+1} - 1}{\sqrt{2x+1} + 1} \right|.$$

$$2199. \frac{1}{15} \left[ \frac{1}{2} \ln \frac{(z-1)^2}{z^2+z+1} - \sqrt{3} \operatorname{arctg} \frac{2z+1}{\sqrt{3}} \right] + C, \text{ gde je } z=x^2.$$

$$2200. C - \frac{1}{4} \ln \left| \operatorname{tg} \frac{x}{2} \right| + \frac{1}{8 \sin^2 \frac{x}{2}}. \quad 2201. \frac{1}{\sqrt{2}} \operatorname{arctg} \frac{\operatorname{tg} x}{\sqrt{2}} + C.$$

$$2202. \frac{2}{b^2 \sin 2\alpha} \ln \left| \frac{\sin(\alpha-x)}{\sin(\alpha+x)} \right| + C, \text{ gde je } \alpha = \arccos \frac{a}{b}, \text{ ako je } a^2 < b^2;$$

$$\frac{1}{a^2 \sin \alpha} \operatorname{arctg} \frac{\operatorname{tg} x}{\sin \alpha} + C, \text{ gde je } \alpha = \arccos \frac{b}{a}, \text{ ako je } a^2 > b^2.$$

$$2203. \frac{1}{2} x^2 \ln(1+x^3) - \frac{3}{4} x^2 + \frac{1}{4} \ln(x^2-x+1) - \frac{1}{2} \ln(x+1) +$$

$$+ \frac{\sqrt{3}}{2} \operatorname{arctg} \frac{2x-1}{\sqrt{3}} + C.$$

$$2204. \frac{x}{\ln x} + C. \quad 2205. \operatorname{arctg} \sqrt{x^2-1} - \frac{\ln x}{\sqrt{x^2-1}} + C.$$

$$2206. \frac{1}{2} e^x [(x^2-1) \cos x + (x-1)^2 \sin x] + C. \quad 2207. \frac{x^2 e^{x^2}}{2} + C$$

$$2208. \frac{2}{3} \frac{\operatorname{tg}^2 x - 3}{\sqrt{\operatorname{tg} x}} + C.$$

$$2209. \frac{1}{4} (\operatorname{tg}^4 x - \operatorname{ctg}^4 x) + 2 (\operatorname{tg}^2 x - \operatorname{ctg}^2 x) + 6 \ln |\operatorname{tg} x| + C.$$

$$2210. \operatorname{arctg}(\operatorname{tg}^2 x) + C. \quad 2211. \ln \left| 1 + \operatorname{tg} \frac{x}{2} \right| + C.$$

$$2212. \operatorname{arctg} \frac{\operatorname{tg} x}{\sqrt{2+\operatorname{tg}^2 x}} + \ln(\sqrt{2+\operatorname{tg}^2 x} + \operatorname{tg} x) + C.$$

$$2213. \ln \frac{x^2+1+\sqrt{x^4+3x^2+1}}{x} + C.$$

$$2214. C - \frac{1}{\sqrt{15}} \ln \left| \frac{x+6+\sqrt{60x-15x^2}}{2x-3} \right|. \quad 2215. \frac{e^x}{1+x} + C.$$

$$2216. 2x\sqrt{1+e^x} - 4\sqrt{1+e^x} - 2 \ln \frac{\sqrt{1+e^x}-1}{\sqrt{1+e^x}+1} + C.$$

$$2217. \frac{1}{6} \ln \frac{1+x^2}{x^2} - \frac{\operatorname{arctg} x}{3x^2} - \frac{1}{6x^2} + C.$$

$$2218. C - \frac{\operatorname{arctg} x}{2(1+x^2)} + \frac{\operatorname{arctg} x}{4} + \frac{x}{4(1+x^2)}.$$

$$2219. \frac{1}{4} \ln \frac{|x+1|}{\sqrt{x^2+1}} - \frac{\operatorname{arctg} x}{2(1+x)^2} - \frac{1}{4(x+1)} + C.$$

$$2220. x - \log_2 |1 - 2^x| + \frac{1}{\ln 2} \left[ \frac{1}{1 - 2^x} + \frac{1}{2(1 - 2^x)^2} + \frac{1}{3(1 - 2^x)^3} \right] + C.$$

$$2221. \operatorname{arctg}(e^x - e^{-x}) + C. \quad 2222. \ln \frac{\sqrt{1 + e^x + e^{2x}} - e^x - 1}{\sqrt{1 + e^x + e^{2x}} - e^x + 1} + C.$$

$$2223. x - \frac{2}{\sqrt{3}} \operatorname{arctg} \frac{1 + 2 \operatorname{tg} x}{\sqrt{3}} + C.$$

$$2224. \frac{35}{128} x - \frac{1}{4} \sin 2x + \frac{7}{128} \sin 4x + \frac{1}{24} \sin^3 2x + \frac{1}{1024} \sin 8x + C.$$

$$2225. \frac{1}{2} x^2 + \frac{3}{2} \ln(1 + x^2) + \frac{1}{(1 + x^2)^2} + C.$$

$$2226. \frac{8}{49(x-5)} - \frac{27}{49(x+2)} + \frac{30}{343} \ln \left| \frac{x-5}{x+2} \right| + C.$$

$$2227. C - \frac{\sqrt{2}}{2} \operatorname{arctg}(\sqrt{2} \operatorname{ctg} 2x). \quad 2228. x \operatorname{tg} \frac{x}{2} + C.$$

$$2229^*. \frac{1}{\sqrt{2}} \arccos \frac{x\sqrt{2}}{x^2+1} + C. \quad \left( \text{Podeliti brojilac i menilac sa } x^2 \text{ i primeniti smenu} \right. \\ \left. x + \frac{1}{x} = z. \right)$$

$$2230. e^{\sin x} (x - \sec x) + C.$$