

F. 다음의 부정적분을 구하여라.

$$[1]. \int \frac{x}{1+x \tan x} dx = ?$$

$$[2]. \int \frac{\sin x - 5 \cos x}{\sin x + \cos x} dx = ?$$

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

$$[4]. \int x \cos x \cdot \sin x dx = ?$$

$$[5]. \int \frac{1}{5+3 \cos x} dx = ?$$

$$[6]. \int \frac{1}{x^4+4} dx = ?$$

$$[7]. \int \frac{1}{e^x+1} dx = ?$$

$$[8]. \int \frac{1}{\sqrt{x}} \sec \sqrt{x} dx = ?$$

$$[9]. \int \frac{1}{x \sqrt{4x^2-9}} dx = ?$$

$$[10]. \int \frac{1}{(1+x^2)^{\frac{5}{2}}} dx = ?$$

$$[11]. \int (9 + x^2)^{\frac{3}{2}} dx = ?$$

$$[12]. \int \frac{1}{(1 - x^2)^3} dx = ?$$

$$[13]. \int (4 - x^2)^{\frac{3}{2}} dx = ?$$

$$[14]. \int (x^2 - 1)^{\frac{5}{2}} dx = ?$$

$$[15]. \int x^5 \sqrt{1 - x^3} dx = ?$$

$$[16]. \int \frac{\sqrt{x - x^2}}{x^4} dx = ?$$

$$[17]. \int \frac{\sqrt{x}}{(1 + x)^{\frac{7}{2}}} dx = ?$$

$$[18]. \int \frac{\sqrt{x}}{\sqrt{1 - x^3}} dx = ?$$

$$[19]. \int e^{x - e^x} dx = ?$$

$$[20]. \int \frac{1}{x \sqrt{3x^2 + 2x - 1}} dx = ?$$

$$[21]. \int \frac{(e^x - 2)e^x}{e^x + 1} dx = ?$$

$$[22]. \int \frac{\sin x \cdot \cos x}{1 - \cos x} dx = ?$$

$$[23]. \int \frac{1}{x^2 \sqrt{4 - x^2}} dx = ?$$

$$[24]. \int \frac{1}{x^2(4 + x^2)} dx = ?$$

$$[25]. \int \sqrt{1 + \sqrt{x}} dx = ?$$

$$[26]. \int \frac{1}{3(1 - x^2) - (5 + 4x)\sqrt{1 - x^2}} dx = ?$$

$$[27]. \int x^4 \sin x dx = ?$$

$$[28]. \int \sin^m x \cdot \cos^n x dx = ?$$

$$[29]. \int \frac{1}{(x - a_1)(x - a_2) \cdot \cdot \cdot (x - a_n)} dx = ?$$

$$[30]. \int \frac{\sec x \cdot \tan x}{9 + 4\sec^2 x} dx = ?$$

$$[31]. \int \frac{1}{\sqrt{x} - x} dx = ?$$

$$[32]. \int \frac{1}{\sqrt[3]{x} + x} dx = ?$$

$$[33]. \int \operatorname{cosec} 3x dx = ?$$

$$[34]. \int \sin(\ln x) dx = ?$$

$$[35]. \int (1 + \cos 3x)^{\frac{3}{2}} dx = ?$$

$$[36]. \int \frac{1}{x - x^{11}} dx = ?$$

$$[37]. \int \frac{\sqrt[3]{\cos^2 x}}{\sqrt[3]{\sin^8 x}} dx = ?$$

$$[38]. \int \tan x \sqrt{\sec x} dx = ?$$

$$[39]. \int \sec^3 x dx = ?$$

$$[40]. \int \frac{1}{e^{2x} - 3e^x} dx = ?$$

$$[41]. \int \frac{\sin x}{\cos x (1 + \cos^2 x)} dx = ?$$

$$[42]. \int \frac{(2 + \tan^2 x) \sec^2 x}{1 + \tan^3 x} dx = ?$$

$$[43]. \int \frac{1}{x\sqrt{x^2+x+2}} dx = ?$$

$$[44]. \int \frac{x}{(5-4x-x^2)^{3/2}} dx = ?$$

$$[45]. \int \frac{1}{1+\sin x - \cos x} dx = ?$$

$$[46]. \int \frac{\sqrt{x}}{1+x} dx = ?$$

$$[47]. \int \frac{1}{\sqrt{x}(1+\sqrt{x})} dx = ?$$

$$[48]. \int \frac{1}{3+\sqrt{x+2}} dx = ?$$

$$[49]. \int \frac{1-\sqrt{3x+2}}{1+\sqrt{3x+2}} dx = ?$$

$$[50]. \int \frac{1}{\sqrt{x^2-x+1}} dx = ?$$

$$[51]. \int \frac{1}{\sqrt{6+x-x^2}} dx = ?$$

$$[52]. \int \frac{\sqrt{4x-x^2}}{x^3} dx = ?$$

$$[53]. \int \frac{1}{\sqrt{x+1} + \sqrt[4]{x+1}} dx = ?$$

$$[54]. \int \frac{1}{2 + \sin x} dx = ?$$

$$[55]. \int \frac{1}{1 - 2 \sin x} dx = ?$$

$$[56]. \int \frac{1}{\sin x - \cos x - 1} dx = ?$$

$$[57]. \int \frac{\sin x}{1 + \sin^2 x} dx = ?$$

$$[58]. \int \frac{1}{2 - \cos x} dx = ?$$

$$[59]. \int \sin \sqrt{x} dx = ?$$

$$[60]. \int \frac{x^6 + 7x^5 + 15x^4 + 32x^3 + 23x^2 + 25x - 3}{(x^2 + x + 2)^2 (x^2 + 1)^2} dx = ?$$

$$[61]. \int \operatorname{cosec}^5 x dx = ?$$

$$[62]. \int \sec^6 x dx = ?$$

$$[63]. \int \frac{1}{\cos(2\sin^{-1} x)} dx = ?$$

$$[64]. \int \frac{1}{1 + \sqrt{x} + \sqrt{x+1}} dx = ?$$

$$[65]. \int \cos(\ln x) dx = ?$$

$$[66]. \int \ln\left(\frac{-1 + \sqrt{1+4x}}{2}\right) dx = ?$$

$$[67]. \int \sqrt{\tan x} dx = ?$$

$$[68]. \int \frac{1}{x^2 \sqrt{x-1}} dx = ?$$

$$[69]. \int \frac{\sqrt{\sin x} + \sqrt{\cos x} + 3(\sqrt{\sin x} - \sqrt{\cos x})\cos 2x}{\sqrt{\sin 2x}} dx = ?$$

$$[70]. \int e^{x+e^x+e^{e^x}+e^{e^{e^x}}} dx = ?$$

$$[71]. \int \frac{\sqrt{1+\ln x}}{x \ln x} dx = ?$$

$$[72]. \int x \cdot \tan^{-1} \sqrt{x} dx = ?$$

$$[73]. \int \frac{1}{x \sqrt{x^4-1}} dx = ?$$

$$[74]. \int \frac{x e^{2x}}{(2x+1)^2} dx = ?$$

$$[75]. \int \frac{4x^5 - 1}{(x^5 + x + 1)^2} dx = ?$$

$$[76]. \int \frac{\ln\left(\ln\left(\frac{1+x}{1-x}\right)\right)}{1-x^2} dx = ?$$

$$[77]. \int \sqrt[3]{x} \ln(1+x\sqrt[3]{x}) dx = ?$$

$$[78]. \int \frac{x^{3n-1} - x^{n-1}}{x^{4n} + 1} dx = ?$$

$$[79]. \int \frac{2 \operatorname{cosec} 2x}{\ln(\tan x)} dx = ?$$

$$[80]. \int \frac{dx}{x \sqrt{x(x-1)}} = ?$$

$$[81]. \int (2x^{-6} + x^{-9})^{\frac{2}{3}} dx = ?$$

$$[82]. \int (xe^x + e^x) \ln^2 x - 2 \frac{e^x}{x} dx = ?$$

$$[83]. \int \frac{x \ln x}{(x^2 + 1)^2} dx = ?$$

$$[84]. \int \frac{\ln x}{x^2 \sqrt{x^2 + 1}} dx = ?$$

$$[85]. \int \frac{x^2}{(x \sin x + \cos x)^2} dx = ?$$

$$[86]. \int \frac{x^2 + x}{(e^x + x + 1)^2} dx = ?$$

$$[87]. \int x \sin x (\sin x + x \cos x) dx = ?$$

$$[88]. \int \sqrt[3]{\tan x} dx = ?$$

$$[89]. \int \frac{\sin x \cos x}{\sin^4 x + \cos^4 x} dx = ?$$

$$[90]. \int \frac{x^{11} - x^3}{(1 + x^8)^2} dx = ?$$

$$[91]. \int x \sqrt{\frac{x-1}{x+1}} dx = ?$$

$$[92]. \int \frac{x^3 e^{x^2}}{(1 + x^2)^2} dx = ?$$

$$[93]. \int \frac{1}{\sin^4 x + \cos^4 x} dx = ?$$

$$[94]. \int \frac{x^a \sqrt{x}}{1+x^{4a+6}} dx = ?$$

$$[95]. \int \frac{1}{\sin^6 x + \cos^6 x} dx = ?$$

$$[96]. \int \frac{x+3}{x^2 \sqrt{2x+3}} dx = ?$$

$$[97]. \int \frac{x^2}{1+x^4} dx = ?$$

$$[98]. \int \frac{x^{3n-1}}{x^{4n}+1} dx = ?$$

$$[99]. f(x) = \frac{\sin x - x \cos x}{x + \sin x} \Rightarrow \int \frac{f(x)}{\sin x} dx = ?, (x > 0)$$

$$[100]. \int \frac{\ln(x + \sqrt{1+x^2})}{\sqrt{1+x^2}} dx = ?$$

$$[101]. \int \frac{1}{\sin x \sqrt{\sin^2 x + a^2}} dx = ?$$

$$[102]. \int \frac{x}{(x^2 - x + 1)^2} dx = ?$$

$$[103]. \int \frac{1}{1 + \sin^2 x} dx = ?$$

$$[104]. \int \sqrt{1 + \sin x} \, dx = ?$$

$$[105]. \int \frac{dx}{x(x+1)(x+2) \cdots (x+m)} = ?$$

$$[106]. \int \frac{\cos^4 x}{\sin^3 x} \, dx = ?$$

$$[107]. \int \frac{\sin^3 x}{\cos^{2/3} x} \, dx = ?$$

$$[108]. \int \sqrt{\frac{1 - \sqrt{x}}{1 + \sqrt{x}}} \cdot \frac{1}{x} \, dx = ?$$

$$[109]. \int \frac{1}{x^n(1+x^n)^{1/n}} \, dx = ?$$

$$[110]. \int e^x \ln x \, dx = ?$$

$$[111]. \int \frac{x \ln x}{\sqrt{1-x^2}} \, dx = ?$$

$$[112]. \int \frac{dx}{x \sqrt{x^4 + x^2 + 1}} = ?$$

$$[113]. \int \frac{(x-1) \sqrt{x^4 + 2x^3 - x^2 + 2x + 1}}{x^2(x+1)} \, dx = ?$$

$$[114]. \int \frac{\cos x + x \sin x}{(x + \cos x)^2} dx = ?$$

$$[115]. \int x \sqrt{\frac{2\sin(x^2 + 1) - \sin 2(x^2 + 1)}{2\sin(x^2 + 1) + \sin 2(x^2 + 1)}} dx = ?$$

$$[116]. \int \frac{\sin^{-1} x}{x^2} dx = ?$$

$$[117]. \int \frac{x^2}{(1 + x^2)^2} dx = ?$$

$$[118]. \int \frac{1}{1 + \sqrt{1 - x^2}} dx = ?$$

$$[119]. \int \left(\tan x + \frac{1}{\tan x} \right)^2 dx = ?$$

$$[120]. \int \sqrt{1 - \sin x} dx = ?$$

$$[121]. \int \sqrt{\frac{1 - \cos x}{\cos \alpha - \cos x}} dx = ?$$

$$[122]. \int \sin^{-1} \left(\sqrt{\frac{x}{x + a}} \right) dx = ?$$

$$[123]. \int \frac{x^{5n-1} + x^{n-1}}{1 + x^{6n}} dx = ?$$

$$[124]. \int x 2^x dx = ?$$

$$[125]. \int \frac{3\cot^2 x - \sqrt{\sin x} \cos x}{\sin^2 x} dx = ?$$

$$[126]. \int \frac{\ln x}{(1 + \ln x)^2} dx = ?$$

$$[127]. \int \frac{\sqrt{a^2 - x^2}}{x^4} dx = ?$$

$$[128]. \int \sqrt{\frac{e^x - 1}{e^x + 1}} dx = ?$$

$$[129]. \int \frac{\ln(x+1) - \ln x}{x(x+1)} dx = ?$$

$$[130]. \int \frac{x^2}{(4x - x^2)^{\frac{3}{2}}} dx = ?$$

$$[131]. \int \sqrt{1 - \cos x} dx = ?$$

$$[132]. \int \frac{x^3}{(x-1)^3(x-2)} dx = ?$$

$$[133]. \int \frac{x^2 - 1}{x^4 + x^2 + 1} dx = ?$$

$$[134]. \int \frac{1}{x^4 + x^2 + 1} dx = ?$$

$$[135]. (x^2 + y^2)^2 = 2c^2(x^2 - y^2) \Rightarrow \int \frac{dx}{y(x^2 + y^2 + c^2)} = ?$$

$$[136]. \int \frac{2-x}{\sqrt{4-x^2}} dx = ?$$

$$[137]. \int \frac{x-1}{\sqrt{x^2-x+1}} dx = ?$$

$$[138]. \int x^2 \ln\left(\frac{1-x}{1+x}\right) dx = ?$$

$$[139]. \int x^2 \sqrt{4-x^2} dx = ?$$

$$[140]. \int \frac{\sin 2x}{\sin^4 x + \cos^4 x} dx = ?$$

$$[141]. \int \frac{1-x}{e^x + x^2 e^{-x}} dx = ?$$

$$[142]. \int \frac{x^2(\ln x - 1)}{x^4 - \ln^4 x} dx = ?$$

$$[143]. \int \frac{\tan^{-1} x - \frac{x}{x^2+1}}{(x + \tan^{-1} x)(x - \tan^{-1} x)} dx = ?$$

$$[144]. \int \frac{\sqrt{\sqrt{x^4+1}-x^2}}{x^4+1} dx = ?$$

$$[145]. \int \frac{1}{(x-2)\sqrt{x^2-1}} dx = ?$$

$$[146]. \int \frac{1}{\sqrt{e^{2x}+1}} dx = ?$$

$$[147]. \int \frac{1}{\sqrt{e^x+e^{-x}}} dx = ?$$

$$[148]. \int \frac{1}{x(2+3\ln^2 x)} dx = ?$$

$$[149]. \int \frac{e^{\tan^{-1}x}}{\sqrt{(1+x^2)^3}} dx = ?$$

$$[150]. \int \frac{\sin^{-1}x}{\sqrt{1-x}} dx = ?$$

$$[151]. \int \frac{1}{x(x^6+1)^2} dx = ?$$

$$[152]. \int \frac{1}{x(x^n+1)} dx = ?$$

$$[153]. \int \frac{\sqrt{x^2+x+1}}{x+1} dx = ?$$

$$[154]. \int \frac{\sin x \cos x}{e^{px}} dx = ?$$

$$[155]. \int x^2 \sqrt{x^2 + 4} dx = ?$$