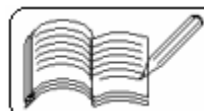
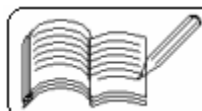


Integrate the following functions with respect to x:

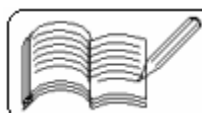
(1) $\frac{x^4 + x^2 + 1}{x^2 + 1}$	(2) $\frac{x^6 + 2}{x^2 + 1}$	(3) $\frac{x^4}{x^2 + 1}$
(4) $\left[\left(\log \frac{1}{2} \right)^2 - x^2 \right]^{-\frac{1}{2}}$	(5) $\frac{\sin x}{1 - \sin x}$	(6) $\frac{e^{2x} - 1}{e^{2x} + 1}$
(7) $\frac{1}{\cos^2 x \sin^2 x}$	(8) $\frac{1}{a^2 \cos^2 x + b^2 \sin^2 x}$	(9) $\frac{1}{1 + \tan x}$
(10) $\frac{1}{x \sqrt{1 - x^3}}$	(11) $\frac{x^2 - 1}{x^4 + 1}$	(12) $\frac{\sin x \cos x}{3 \sin^2 x - 4 \cos^2 x}$
(13) $\frac{\sqrt{1 + \cos 2x}}{(\pi/2 < x < \pi)}$	(14) $\frac{x \tan^{-1} x^2}{1 + x^4}$	(15) $\frac{\sin x}{\sqrt{1 + \sin x}}$ ($0 < x < \pi$)
(16) $\frac{\sqrt{1 - \sin 2x}}{(-\pi/4 < x < \pi/4)}$	(17) $\sqrt{\sin x \sin 2x}$	(18) $\cot^6 x$
(19) $\frac{\cos^3 x}{\sin^2 x}$	(20) $\frac{1}{\sin(x - a) \sin(x - b)}$	(21) $\sin^2 x \cos^4 x$
(22) $\sqrt{\frac{x}{1 - x^3}}$	(23) $\frac{1}{5 + 4 \cos x + 3 \sin x}$	(24) $\frac{1}{x^{\frac{1}{2}} - x^{\frac{1}{3}}}$
(25) $\frac{\sqrt{1 - x}}{\sqrt{1 + x}}$	(26) $\frac{\cos x}{\sqrt{1 - \cos x}}$ ($0 < x < \pi$)	(27) $\frac{\sqrt{5 - x}}{x}$
(28) $\frac{1}{(x - 1)^{\frac{3}{2}} (x - 2)^{\frac{1}{2}}}$	(29) $\sin^2 x \cos 2x$	(30) $\frac{3x + 1}{2x^2 + x + 1}$



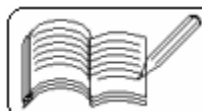
(31) $\frac{1}{x\sqrt{x^4 - a^4}}$	(32) $\frac{1}{\sqrt{(x-1)(4-x)}}$	(33) $\frac{\sqrt{25-x^2}}{x^2}$
(34) $\frac{1}{x\sqrt{2ax-x^2}}$ ($0 < x < 2a$)	(35) $\cos x \sin^2 2x$	(36) $\frac{3x+1}{\sqrt{8-2x-x^2}}$
(37) $x^2 e^{3x}$	(38) $\sqrt{(3x-1)(x+2)}$	(39) $5^x e^{2x-1}$
(40) $\frac{x^2}{x^4+1}$	(41) $x \sin x \cos 3x$	(42) $x\sqrt{2ax-x^2}$
(43) $\sin^{-1} \frac{x}{\sqrt{1+x^2}}$	(44) $\frac{1}{x+\sqrt{x-1}}$	(45) $\cos^{-1} \frac{1-x^2}{1+x^2}$ ($x < 0$)
(46) $\frac{x^3}{(1+x^2)^{\frac{9}{2}}}$	(47) $\frac{x^2}{(x^2-a^2)^{\frac{3}{2}}}$ ($x > 0, a > 0$)	(48) $\frac{x^2+1}{(x+1)^2} e^x$
(49) $\frac{\sin 5x}{\sin x}$	(50) $x^2 \tan^{-1} x$	(51) $x \sin^2 x$
(52) $x \sec^2 x \tan x$	(53) $e^{-x} \sin^2 2x$	(54) $\frac{1}{x^4-1}$
(55) $2^x \cos^2 x$	(56) $\sec^4 x$	(57) $\frac{x^2}{(x^3-1)(x^3+4)}$
(58) $e^{2x} \sin 3x \sin x$	(59) $\sec^3 x$	(60) $\frac{x}{(3x^2+2)(x-2)}$



(61) $\frac{x^3}{(x^2 + 2)(x^2 + 5)}$	(62) $\frac{1}{6e^{2x} + 5e^x + 1}$	(63) $\frac{1}{(x - 1)(x^2 + 4)}$
(64) $\frac{\cos^{-1}\sqrt{x} - \sin^{-1}\sqrt{x}}{\cos^{-1}\sqrt{x} + \sin^{-1}\sqrt{x}}$	(65) $\frac{\sqrt{\sin x}}{\cos x}$	(66) $x^2 \cos(\log x)$
(67) $\frac{x}{(x^2 + a^2)(x^2 + b^2)}$	(68) $\frac{x^2 + 4x - 1}{x^3 - x}$	(69) $\frac{x^2}{(x^2 + 1)(x^2 + 2)}$
(70) $\frac{\sqrt{1 - \sin x}}{1 + \cos x} e^{-\frac{x}{2}}$ ($0 < x < \pi/2$)	(71) $\frac{1}{x(x^3 + 1)}$	(72) $\frac{\sin x}{\sin 4x}$
(73) $\frac{1}{\cos x (1 + 2 \sin x)}$	(74) $\frac{1}{\sin x + \sin 2x}$	(75) $\sqrt{\tan x}$
(76) $\frac{x}{\sqrt{a - x}}$	(77) $\frac{x^4 + x^2 + 1}{x^2 + x + 1}$	(78) $(1 + x)\sqrt{1 - x}$
(79) $\sin x \cos x (\sin 2x + \cos 2x)$	(80) $\frac{\sin x + \cos x}{\sqrt{\sin 2x}}$	(81) $x \sqrt{\frac{a^2 - x^2}{a^2 + x^2}}$
(82) $\frac{\tan x}{\sqrt{3 + 4 \tan^2 x}}$	(83) $\frac{1}{(e^x + e^{-2x})^{\frac{3}{2}}}$	(84) $\frac{1}{(2x + 1)\sqrt{4x + 3}}$
(85) $\frac{1 + x^2}{\sqrt{1 - x^2}}$	(86) $\frac{1}{(1 + x)\sqrt{1 - x^2}}$	(87) $\frac{1}{\cos 2x + 3 \sin^2 x}$
(88) $\frac{6x + 7}{\sqrt{(x - 5)(x - 4)}}$	(89) $\sin^4 3x \cos^2 3x$	(90) $\sqrt{\sec x + 1}$ $0 < x < \pi, x \neq \pi/2$



(91) $\frac{1}{a^2 - b^2 \cos^2 x}$ ($a > b$)	(92) $\sqrt{\tan x} + \sqrt{\cot x}$	(93) $\frac{\tan x}{1 + \tan x + \tan^2 x}$
(94) $\frac{1}{(1+x)\sqrt{1+2x-x^2}}$	(95) $\frac{x}{(x^2+4)\sqrt{x^2+1}}$	(96) $\frac{x^2+1}{x^4+7x^2+1}$
(97) $\frac{1}{\sin^4 x + \cos^4 x}$	(98) $\sqrt{\cot x}$	(99) $\frac{\sin x + \cos x}{9 + 16 \sin 2x}$
(100) $\frac{1}{\sec x + \operatorname{cosec} x}$	(101) $\frac{4e^x + 6e^{-x}}{9e^x - 4e^{-x}}$	(102) $\frac{\sqrt{a} - \sqrt{x}}{1 - \sqrt{ax}}$
(103) $\frac{1}{x(x^n + 1)}$	(104) $\frac{1}{\sin x + \sec x}$	(105) $\tan^{-1} \sqrt{x}$
(106) $\frac{1 + \sqrt{x}}{1 + x^4}$	(107) $\frac{x}{1 + \sin x}$	(108) $\sin \sqrt{x}$
(109) $\tan x \tan 2x \tan 3x$	(110) $\frac{1}{x^3 \sqrt{x^4 - 1}}$	(111) $x \sin^3 x$
(112) $\tan^{-1} \sqrt{\frac{x}{a-x}}$	(113) $\frac{x(x+1)(x+2)}{(x+3)(x+4)(x+5)}$	(114) $\sqrt{\frac{a+x}{x}}$
(115) $\frac{\tan x + \tan^3 x}{1 + \tan^3 x}$	(116) $\frac{x^2}{(x \sin x + \cos x)^2}$	(117) $\sqrt{\frac{x^{n-2}}{1-x^n}}$
(118) $\frac{1}{x^2(1+x^2)^2}$	(119) $\sin^{-1} \sqrt{\frac{x}{a+x}}$	(120) $\frac{1}{5 - 2 \cos x - 2\sqrt{3} \sin x}$

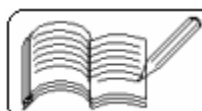


(121) $\frac{\sqrt{\sin(x - a)}}{\sqrt{\sin(x + a)}}$	(122) $\frac{3 + 2 \tan x}{4 + 3 \tan x}$	(123) $\sqrt{\frac{1 - \sqrt{x}}{1 + \sqrt{x}}}$
(124) $\frac{1}{\sqrt{\sin^3 x \sin(x + \alpha)}}$	(125) $\sqrt{\frac{x - \alpha}{\beta - x}}$	(126) $\frac{\sin^2 x}{4 + \cos^2 x}$
(127) $\frac{1}{1 + \tan^4 x}$	(128) $\log \log x + \frac{1}{(\log x)^2}$	(129) $\frac{x^7}{x^{12} - 1}$
(130) $\frac{1}{(\sin x - 2\cos x)(2\sin x + \cos x)}$	(131) $\cot^{-1}(1 - x + x^2)$	(132) $\frac{\sin^3 x}{(1 + \cos^2 x)\sqrt{1 + \cos^2 x + \cos^4 x}}$
(133) $x(\tan^{-1} x)^2$	(134) $\frac{1}{\sqrt[4]{(x - 1)^3(x + 2)^5}}$	(135) $\frac{x^3}{(x - 1)(x - 2)(x - 3)}$
(136) $\frac{\sin x - \cos x}{(\sin x + \cos x)\sqrt{\sin x \cos x + \sin^2 x \cos^2 x}}$	(137) $\frac{\sqrt{\cos 2x}}{\sin x}$	

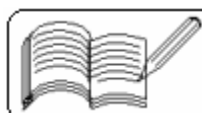
Answers

(Add constant C to all answers)

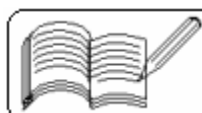
Answer: [1] $\frac{x^3}{3} + \tan^{-1} x$	Answer: [2] $\frac{x^5}{5} - \frac{x^3}{3} + x + \tan^{-1} x$	Answer: [3] $\frac{x^3}{3} - x + \tan^{-1} x$
Answer: [4] $\sin^{-1} \frac{x}{\log 2}$	Answer: [5] $\sec x + \tan x - x$	Answer: [6] $\log(e^x + e^{-x})$



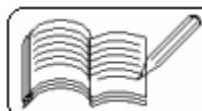
Answer: [7] $\tan x - \cot x$	Answer: [8] $\frac{1}{ab} \tan^{-1} \left[\frac{b}{a} \tan x \right]$	Answer: [9] $\frac{x}{2} + \frac{1}{2} \log \cos x + \sin x $
Answer: [10] $\frac{1}{3} \log \left \frac{\sqrt{1-x^3} - 1}{\sqrt{1-x^3} + 1} \right $	Answer: [11] $\frac{1}{2\sqrt{2}} \log \left \frac{x^2 - \sqrt{2}x + 1}{x^2 + \sqrt{2}x + 1} \right $	Answer: [12] $\frac{1}{14} \log 3 \sin^2 x - 4 \cos^2 x $
Answer: [13] $-\sqrt{2} \sin x$	Answer: [14] $\frac{1}{4} (\tan^{-1} x^2)^2$	Answer: [15] $-2\sqrt{2} \sin \left(\frac{\pi}{4} - \frac{x}{2} \right) - \frac{1}{2} \log \left \tan \left(\frac{\pi}{8} - \frac{x}{4} \right) \right $
Answer: [16] $\sin x + \cos x$	Answer: [17] $\frac{4 (\sin x)^{\frac{5}{2}}}{5}$	Answer: [18] $-\frac{\cot^5 x}{5} + \frac{\cot^3 x}{3} - \cot x - x$
Answer: [19] $-\frac{1}{\sin x} - \sin x$	Answer: [20] $\frac{1}{\sin(a-b)} \log \left \frac{\sin(x-a)}{\sin(x-b)} \right $	Answer: [21] $\frac{1}{192} (12x - 3 \sin 4x + 3 \sin 2x - \sin 6x)$
Answer: [22] $\frac{2}{3} \sin^{-1} x^{\frac{3}{2}}$	Answer: [23] $-\frac{2}{\tan \frac{x}{2} + 3}$	Answer: [24] $2x^{\frac{1}{2}} - 3x^{\frac{1}{3}} + 6x^{\frac{1}{6}} - 6 \log \left(1 + x^{\frac{1}{6}} \right)$
Answer: [25] $\sin^{-1} x + \sqrt{1-x^2}$	Answer: [26] $\sqrt{2} \log \left \tan \frac{x}{4} \right + 2\sqrt{2} \cos \frac{x}{2}$	Answer: [27] $2\sqrt{5-x} - \sqrt{5} \log \left \frac{\sqrt{5-x} + \sqrt{5}}{\sqrt{5-x} - \sqrt{5}} \right $
Answer: [28] $2\sqrt{\frac{x-2}{x-1}}$	Answer: [29] $\frac{\sin 2x}{4} - \frac{x}{4} - \frac{\sin 4x}{16}$	Answer: [30] $\frac{3}{4} \log 2x^2 + x + 1 + \frac{1}{2\sqrt{7}} \tan^{-1} \frac{4x+1}{\sqrt{7}}$
Answer: [31] $\frac{1}{2a^2} \sec^{-1} \frac{x^2}{a^2}$	Answer: [32] $2 \sin^{-1} \sqrt{\frac{x-1}{3}}$	Answer: [33] $-\frac{\sqrt{25-x^2}}{x} - \sin^{-1} \frac{x}{5}$



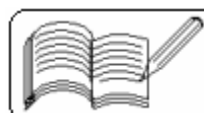
<p>Answer:</p> <p>[34] $-\frac{1}{a} \sqrt{\frac{2a-x}{a}}$</p>	<p>Answer:</p> <p>[35] $\frac{4}{3} \sin^3 x - \frac{4}{5} \sin^5 x$</p>	<p>Answer:</p> <p>[36] $-3\sqrt{8-2x-x^2} - 2\sin^{-1} \frac{x+1}{3}$</p>
<p>Answer:</p> <p>[37] $\left[\frac{x^2}{3} - \frac{2x}{9} + \frac{2}{27} \right] e^{3x}$</p>	<p>Answer:</p> <p>[38] $\frac{6x+5}{12} \sqrt{(3x-1)(x+2)} - \frac{49}{24\sqrt{3}} \log \left \frac{6x+5}{2\sqrt{3}} + \sqrt{(3x-1)(x+2)} \right$</p>	
<p>Answer:</p> <p>[39] $\frac{5^x e^{2x-1}}{(\log 5 + 2)}$</p>	<p>Answer:</p> <p>[40] $\frac{1}{2\sqrt{2}} \tan^{-1} \frac{x^2-1}{\sqrt{2}x} + \frac{1}{4\sqrt{2}} \log \left \frac{x^2 - \sqrt{2}x + 1}{x^2 + \sqrt{2}x + 1} \right$</p>	
<p>Answer:</p> <p>[41] $\frac{\sin 4x}{32} - \frac{\sin 2x}{8} + \frac{x}{4} \cos 2x - \frac{x}{8} \cos 4x$</p>	<p>Answer:</p> <p>[42] $\frac{a^3}{2} \sin^{-1} \frac{x-a}{a} + \frac{a}{2} (x-a) \sqrt{2ax-x^2} - \frac{1}{3} (2ax-x^2)^{\frac{3}{2}}$</p>	
<p>Answer:</p> <p>[43] $x \tan^{-1} x - \frac{1}{2} \log(1+x^2)$</p>	<p>Answer:</p> <p>[44] $\log \left x + \sqrt{x-1} \right - \frac{2}{\sqrt{3}} \tan^{-1} \frac{2\sqrt{x-1}+1}{\sqrt{3}}$</p>	
<p>Answer:</p> <p>[45] $-2 \left[x \tan^{-1} x - \log \sqrt{1+x^2} \right]$</p>	<p>Answer:</p> <p>[46] $\frac{1}{7(1+x^2)^{\frac{7}{2}}} - \frac{1}{5(1+x^2)^{\frac{5}{2}}}$</p>	
<p>Answer:</p> <p>[47] $\log \left x + \sqrt{x^2-a^2} \right - \frac{x}{\sqrt{x^2-a^2}}$</p>	<p>Answer:</p> <p>[48] $e^x \left[\frac{x-1}{x+1} \right]$</p>	<p>Answer:</p> <p>[49] $x + \sin 2x + \frac{\sin 4x}{2}$</p>
<p>Answer:</p> <p>[50] $\frac{x^3}{3} \tan^{-1} x - \frac{1}{6} [x^2 - \log(1+x^2)]$</p>	<p>Answer:</p> <p>[51] $\frac{x^2}{4} - \frac{x \sin 2x}{4} - \frac{\cos 2x}{8}$</p>	<p>Answer:</p> <p>[52] $\frac{x \sec^2 x}{2} - \frac{\tan x}{2}$</p>
<p>Answer:</p> <p>[53] $-\frac{e^{-x}}{2} \left[1 - \frac{1}{\sqrt{17}} \cos(4x + \tan^{-1} 4) \right]$</p>	<p>Answer:</p> <p>[54] $\frac{1}{4} \log \left \frac{x-1}{x+1} \right - \frac{1}{2} \tan^{-1} x$</p>	



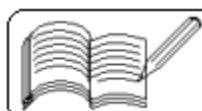
Answer: [55] $\frac{2^x - 1}{\log 2} + \frac{2^{x-1} \cos \left[2x - \tan^{-1} \frac{2}{\log 2} \right]}{\sqrt{(\log 2)^2 + 4}}$		Answer: [56] $\tan x + \frac{\tan^3 x}{3}$
Answer: [57] $\frac{1}{15} \log \left \frac{x^3 - 1}{x^3 + 4} \right $	Answer: [58] $\frac{e^{2x}}{8} (\sin 2x + \cos 2x) - \frac{e^{2x}}{20} (\cos 4x + 2 \sin 4x)$	
Answer: [59] $\frac{1}{2} (\sec x \tan x + \log \sec x + \tan x)$	Answer: [60] $\frac{\log x - 2 }{7} - \frac{1}{14} \log 3x^2 + 2 + \frac{1}{7\sqrt{6}} \tan^{-1} \frac{\sqrt{3} x}{\sqrt{2}}$	
Answer: [61] $\frac{5}{6} \log(x^2 + 5) - \frac{1}{3} \log(x^2 + 2)$	Answer: [62] $\log \left[e^x (3e^x + 1)^{-3} (2e^x + 1)^2 \right]$	
Answer: [63] $\frac{1}{5} \log x - 1 - \frac{1}{10} \log(x^2 + 4) - \frac{1}{10} \tan^{-1} \frac{x}{2}$	Answer: [64] $\frac{2x - 1}{\pi} (\cos^{-1} \sqrt{x} - \sin^{-1} \sqrt{x}) - \frac{2}{\pi} \sqrt{x - x^2}$	
Answer: [65] $\frac{1}{2} \log \left \frac{1 + \sqrt{\sin x}}{1 - \sqrt{\sin x}} \right - \tan^{-1} \sqrt{\sin x}$	Answer: [66] $\frac{x^3}{10} [3 \cos(\log x) + \sin(\log x)]$	
Answer: [67] $\frac{1}{2(a^2 - b^2)} \log \left[\frac{x^2 + b^2}{x^2 + a^2} \right]$	Answer: [68] $\log \left \frac{x(x - 1)^2}{(x + 1)^2} \right $	Answer: [69] $-\tan^{-1} x + \sqrt{2} \tan^{-1} \frac{x}{\sqrt{2}}$
Answer: [70] $-e^{-\frac{x}{2}} \sec \frac{x}{2}$	Answer: [71] $\frac{1}{3} \log \left \frac{x^3}{x^3 + 1} \right $	Answer: [72] $\frac{1}{8} \log \left \frac{\sin x - 1}{\sin x + 1} \right - \frac{1}{4\sqrt{2}} \log \left \frac{\sqrt{2} \sin x - 1}{\sqrt{2} \sin x + 1} \right $
Answer: [73] $-\frac{1}{2} \log(1 + \sin x) - \frac{1}{6} \log(1 - \sin x) + \frac{2}{3} \log 1 + 2 \sin x $		



Answer: [74] $\frac{1}{6} \log(1 - \cos x) + \frac{1}{2} \log(1 + \cos x) - \frac{2}{3} \log 1 + 2 \cos x $		
Answer: [75] $\frac{1}{\sqrt{2}} \tan^{-1} \left[\frac{\tan x - 1}{\sqrt{2 \tan x}} \right] + \frac{1}{2\sqrt{2}} \log \left \frac{\tan x + 1 - \sqrt{2 \tan x}}{\tan x + 1 + \sqrt{2 \tan x}} \right $		Answer: [76] $-2a(a - x)^{\frac{1}{2}} + \frac{2}{3}(a - x)^{\frac{3}{2}}$
Answer: [77] $\frac{x^3}{3} - \frac{x^2}{2} + x$	Answer: [78] $-\frac{4}{3}(1 - x)^{\frac{3}{2}} + \frac{2}{5}(1 - x)^{\frac{5}{2}}$	Answer: [79] $\frac{x}{4} - \frac{\sin 4x}{16} - \frac{\cos 4x}{16}$
Answer: [80] $\sin^{-1}(\sin x - \cos x)$	Answer: [81] $\frac{1}{2} \left[\sqrt{a^4 - x^4} - a^2 \cos^{-1} \frac{x^2}{a^2} \right]$	Answer: [82] $\tan^{-1} \sqrt{3 + 4 \tan^2 x}$
Answer: [83] $-\frac{2}{3 \sqrt{e^{3x} + 1}}$	Answer: [84] $\frac{1}{2} \log \left \frac{\sqrt{4x + 3} - 1}{\sqrt{4x + 3} + 1} \right $	Answer: [85] $\frac{3}{2} \sin^{-1} x - \frac{x \sqrt{1 - x^2}}{2}$
Answer: [86] $-\sqrt{\frac{1 - x}{1 + x}}$	Answer: [87] $\frac{1}{\sqrt{2}} \tan^{-1}(\sqrt{2} \tan x)$	Answer: [88] $6 \sqrt{x^2 - 9x + 20} + 34 \log \left x - \frac{9}{2} + \sqrt{x^2 - 9x + 20} \right $
Answer: [89] $\frac{x}{16} - \frac{\sin 12x}{192} - \frac{\sin^3 6x}{144}$	Answer: [90] $2 \sin^{-1} \left[\sqrt{2} \sin \frac{x}{2} \right]$	Answer: [91] $\frac{1}{a \sqrt{a^2 - b^2}} \tan^{-1} \left[\frac{a}{\sqrt{a^2 - b^2}} \tan x \right]$
Answer: [92] $\sqrt{2} \sin^{-1}(\sin x - \cos x)$	Answer: [93] $x - \frac{2}{\sqrt{3}} \tan^{-1} \left[\frac{2 \tan x + 1}{\sqrt{3}} \right]$	Answer: [94] $\frac{1}{\sqrt{2}} \sin^{-1} \left[\frac{\sqrt{2} x}{1 + x} \right]$
Answer: [95] $\frac{1}{\sqrt{3}} \tan^{-1} \sqrt{\frac{x^2 + 1}{3}}$	Answer: [96] $\frac{1}{3} \tan^{-1} \left[\frac{x^2 - 1}{3x} \right]$	Answer: [97] $\frac{1}{\sqrt{2}} \tan^{-1} \left[\frac{\tan 2x}{\sqrt{2}} \right]$



<p>Answer:</p> <p>[98] $-\frac{1}{\sqrt{2}} \tan^{-1} \left[\frac{\cot x - 1}{\sqrt{2 \cot x}} \right] - \frac{1}{2\sqrt{2}} \log \left \frac{\cot x - \sqrt{2 \cot x} + 1}{\cot x + \sqrt{2 \cot x} + 1} \right$</p>	
<p>Answer:</p> <p>[99] $\frac{1}{40} \log \left \frac{5 + 4(\sin x - \cos x)}{5 - 4(\sin x - \cos x)} \right$</p>	<p>Answer:</p> <p>[100] $\frac{1}{2} (\sin x - \cos x) - \frac{1}{2\sqrt{2}} \log \left \tan \left[\frac{x}{2} + \frac{\pi}{8} \right] \right$</p>
<p>Answer:</p> <p>[101] $-\frac{3x}{2} + \frac{35}{36} \log \left 9e^{2x} - 4 \right$</p>	<p>Answer:</p> <p>[102] $\frac{2}{3} \left[(1 - a) \log \left 1 - \sqrt{ax} \right + (a - 2)(1 - \sqrt{ax}) + \frac{1}{2} (1 - \sqrt{ax})^2 \right]$ a^2</p>
<p>Answer:</p> <p>[103] $\frac{1}{n} \log \left \frac{x^n}{x^n + 1} \right$</p>	<p>Answer:</p> <p>[104] $\frac{1}{2\sqrt{3}} \log \left \frac{\sqrt{3} + (\sin x - \cos x)}{\sqrt{3} - (\sin x - \cos x)} \right + \tan^{-1} (\sin x + \cos x)$</p>
<p>Answer:</p> <p>[105] $(x + 1) \tan^{-1} \sqrt{x} - \sqrt{x}$</p>	<p>Answer:</p> <p>[106] $\frac{4}{5} x^{\frac{5}{4}} - x + \frac{8}{3} x^{\frac{3}{4}} - 4x^{\frac{1}{2}} + 8x^{\frac{1}{4}} - 8 \log \left x^{\frac{1}{4}} + 1 \right$</p>
<p>Answer:</p> <p>[107] $x (\tan x - \sec x) + \log (1 + \sin x)$</p>	<p>Answer:</p> <p>[108] $2 \left[\sin \sqrt{x} - \sqrt{x} \cos \sqrt{x} \right]$</p>
<p>Answer:</p> <p>[109] $\frac{1}{3} \log \sec 3x - \frac{1}{2} \log \sec 2x - \log \sec x$</p>	<p>Answer:</p> <p>[110] $\frac{1}{2} \sqrt{1 - x^{-4}}$</p>
<p>Answer:</p> <p>[111] $\frac{3 \sin x}{4} - \frac{3x \cos x}{4} + \frac{x \cos 3x}{12} - \frac{\sin 3x}{36}$</p>	<p>Answer:</p> <p>[112] $\left(\frac{2x - a}{2} \right) \sin^{-1} \sqrt{\frac{x}{a}} - \frac{1}{2} \sqrt{ax - x^2}$</p>
<p>Answer:</p> <p>[113] $x - 3 \log x + 3 + 24 \log x + 4 - 30 \log x + 5$</p>	<p>Answer:</p> <p>[114] $\sqrt{ax + x^2} + a \log \left \sqrt{x} + \sqrt{x + a} \right$</p>



Answer: [115] $-\frac{1}{3} \log 1 + \tan x + \frac{1}{6} \log \tan^2 x - \tan x + 1 + \frac{1}{\sqrt{3}} \tan^{-1} \frac{2 \tan x - 1}{\sqrt{3}}$		
Answer: [116] $\frac{\sin x - x \cos x}{\cos x + x \sin x}$	Answer: [117] $\frac{2}{n} \sin^{-1} x^{\frac{n}{2}}$	Answer: [118] $-\frac{1}{x} - \frac{3}{2} \tan^{-1} x - \frac{x}{2(1+x^2)}$
Answer: [119] $(x+a) \tan^{-1} \sqrt{\frac{x}{a}} - \sqrt{ax}$	Answer: [120] $\frac{2}{3} \tan^{-1} \left[3 \tan \left(\frac{x}{2} - \frac{\pi}{6} \right) \right]$	
Answer: [121] $\cos a \cos^{-1} \left[\frac{\cos x}{\cos a} \right] - \sin a \log \left \sin x + \sqrt{\sin^2 x - \sin^2 a} \right $	Answer: [122] $\frac{18x}{25} + \frac{1}{25} \log 4 \cos x + 3 \sin x $	
Answer: [123] $\sqrt{x-x^2} - 2\sqrt{1-x} + \cos^{-1} \sqrt{x}$	Answer: [124] $-\frac{2}{\sin \alpha} \sqrt{\cos \alpha + \sin \alpha \cot x}$	
Answer: [125] $-\sqrt{(\beta-x)(x-\alpha)} - (\beta-\alpha) \sin^{-1} \sqrt{\frac{\beta-x}{\beta-\alpha}}$	Answer: [126] $\frac{\sqrt{5}}{2} \tan^{-1} \left(\frac{2 \tan x}{\sqrt{5}} \right) - x$	
Answer: [127] $\frac{x}{2} + \frac{1}{4\sqrt{2}} \log \left \frac{\sqrt{2} + \sin 2x}{\sqrt{2} - \sin 2x} \right $	Answer: [128] $x \log \log x - \frac{x}{\log x}$	
Answer: [129] $\frac{1}{12} \log x^4 - 1 - \frac{1}{24} \log x^8 + x^4 + 1 + \frac{1}{4\sqrt{3}} \tan^{-1} \left[\frac{2x^4 + 1}{\sqrt{3}} \right]$	Answer: [130] $\frac{1}{5} \log \left \frac{\tan x - 2}{2 \tan x + 1} \right $	
Answer: [131] $x \cot^{-1} (1-x+x^2) + \frac{1}{2} \log \left \frac{x^2 - 2x + 2}{x^2 + 1} \right + \tan^{-1} (x-1)$	Answer: [132] $\tan^{-1} \sqrt{\sec^2 x + 1 + \cos^2 x}$	
Answer: [133] $\frac{x^2}{2} (\tan^{-1} x)^2 - x \tan^{-1} x + \log \sec (\tan^{-1} x) + \frac{1}{2} (\tan^{-1} x)^2$	Answer: [134] $\frac{4}{3} \sqrt[4]{\frac{x-1}{x+2}}$	
Answer: [135] $x + \frac{1}{2} \log x-1 - 8 \log x-2 + \frac{27}{2} \log x-3 $	Answer: [136] $\operatorname{cosec}^{-1} (1 + \sin 2x)$	
Answer: [137] $\frac{1}{\sqrt{2}} \log \left \frac{\sqrt{2} + \sqrt{1 - \tan^2 x}}{\sqrt{2} - \sqrt{1 - \tan^2 x}} \right - \frac{1}{2} \log \left \frac{1 + \sqrt{1 - \tan^2 x}}{1 - \sqrt{1 - \tan^2 x}} \right $		

