7. If $f(x) = \tan^{-1}(\sec x + \tan x)$, $\frac{-\pi}{2} < x < \frac{\pi}{2}$ and $f(0) = 0$, then $f(1) =$

a) $\frac{\pi-1}{4}$ b) $\frac{\pi+2}{4}$ c) $\frac{\pi+1}{4}$ d) $\frac{1}{4}$

8. $\int \sin\sqrt{x}\, dx = \ldots\ldots\ldots + c$

a) $2\left(-\cos\sqrt{x} + \sin\sqrt{x}\right)$ b) $2\left(\cos\sqrt{x} + \sqrt{x}\ \sin\sqrt{x}\right)$

c) $2\left(-\sqrt{x}\cos x + \sin\sqrt{x}\right)$ d) $2\left(\sqrt{x}\cos\sqrt{x} + \sin\sqrt{x}\right)$

9. If $\int e^{x^2}.x^3\, dx = e^{x^2} f(x) + c$ and $f(1) = 0$, then value of $f(2)$ will be

a) $\frac{3}{2}$ b) $\frac{1}{2}$ c) $\frac{-3}{2}$ d) $\frac{-1}{2}$

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

a) $\frac{1}{9}\log(x+1) + \frac{5}{9}\log(x-2) - \frac{4}{3} \times \frac{1}{(x-2)} + C$

b) $\frac{-5}{9}\log(x+1) + \frac{5}{9}\log(x-2) - \frac{1}{(x-2)} + C$

c) $\frac{-5}{9}\log(x+1) + \frac{1}{9}\log(x-2) + \frac{1}{x-2} + C$

d) $\frac{-5}{9}\log(x+1) + \frac{5}{9}\log(x-2) - \frac{4}{3}\frac{1}{(x-2)} + C$

[MHT-CET 2021] (online shift)

11. $\int \tan^{-1}(\sec x + \tan x)\, dx =$

a) $\frac{\pi x}{4} + \frac{x^2}{4} + c$ b) $\sin x \cos x + c$ c) $\frac{\pi x}{2} + \frac{x^2}{2} + c$ d) $\sin x + \cos x + c$

12. $\int \sec^4 x.\tan^4 x\, dx = \frac{\tan^m x}{m} + \frac{\tan^n x}{n} + c$ then $m + n =$

a) 8 b) 12 c) 10 d) 16

65. $\int \frac{x^2}{(x\sin x+\cos x)^2}\,dx$ is equal to

a) $\frac{\sin x+\cos x}{x\sin x+\cos x}+c$ b) $\frac{x\sin x-\cos x}{x\sin x+\cos x}+c$ c) $\frac{\sin x-x\cos x}{x\sin x+\cos x}+c$ d) none of these

[MHT-CET 2010]

66. $\int e^{\tan x}\left(\sec^2 x+\sec^3 x\sin x\right)dx$ is equal to

a) $\sec x.\, e^{\tan x}+c$ b) $\tan x\,.\,e^{\tan x}+c$ c) $e^{\tan x}+\tan x+c$ d) $(1+\tan x)\,e^{\tan x}+c$

67. $\int \frac{1}{16x^2+9}\,dx$ is equal to

a) $\frac{1}{3}\tan^{-1}\left(\frac{4x}{3}\right)+c$ b) $\frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)+c$ c) $\frac{1}{12}\tan^{-1}\left(\frac{4x}{3}\right)+c$ d) $\frac{1}{12}\tan^{-1}\left(\frac{3x}{4}\right)+c$

[MHT-CET 2009]

68. $\int[\sin(\log x)+\cos(\log x)]\,dx$ is equal to

a) $x\cos(\log x)+c$ b) $\cos(\log x)+c$ c) $x\sin(\log x)+c$ d) $\sin(\log x)+c$

69. $\int e^x\frac{(x-1)}{x^2}$ is equal to

a) $\frac{e^x}{x^2}+c$ b) $\frac{-e^x}{x^2}+c$ c) $\frac{e^x}{x}+c$ d) $\frac{-e^x}{x}+c$

70. $\int x\log x\,dx$ is equal to

a) $\frac{x^2}{4}(2\log x-1)+c$ b) $\frac{x^2}{2}(2\log x-1)+c$ c) $\frac{x^2}{4}(2\log x+1)+c$ d) $\frac{x^2}{2}(2\log x+1)+c$

[MHT-CET 2008]

71. $\int \frac{x^{e-1}+e^{x-1}}{x^e+e^x}\,dx$ is equal to

a) $\log(x^e+e^x)+c$ b) $e\log(x^e+e^x)+c$ c) $\frac{1}{e}\log(x^e+e^x)+c$ d) none of the above

72. The value of $\int x\sin x\sec^3 x\,dx$ is

a) $\frac{1}{2}\left[\sec^2 x-\tan x\right]+c$ b) $\frac{1}{2}\left[x\sec^2 x-\tan x\right]+c$

c) $\frac{1}{2}\left[x\sec^2 x+\tan x\right]+c$ d) $\frac{1}{2}\left[\sec^2 x+\tan x\right]+c$

[MHT-CET 2007]

73. $\int \frac{x+\sin x}{1+\cos x}\,dx$ is equal to

a) $x\tan\frac{x}{2}+c$ b) $\log(1+\cos x)+c$ c) $\cot\frac{x}{2}+c$ d) $\log(x+\sin x)+c$

113. $\int e^x\left(\frac{x+3}{(x+4)^2}\right)dx =$

a) $\frac{1}{(x+4)^2}+c$ b) $\frac{e^x}{(x+4)^2}+c$ c) $\frac{e^x}{x+4}+c$ d) $\frac{e^x}{x+3}+c$

114. $\int e^x\left(\cot x-1-\cot^2 x\right)dx =$

a) $e^x\cot x+c$ b) $-e^x\cot x+c$ c) $e^x\cot^2 x+c$ d) $-e^x\cot^2 x+c$

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

a) $\log|x|+\log|x-1|+\log|x+1|+c$ b) $\log|x|-\log|x-1|+\log|x+1|+c$
c) $\log|x|+\log|x-1|-\log|x+1|+c$ d) $-\log|x|+\log|x-1|+\log|x+1|+c$

116. $\int \frac{\cos x}{5+7\sin x-2\cos^2 x}dx =$

a) $\frac{1}{5}\log\left|\frac{2\sin x+1}{\sin x+3}\right|+c$ b) $\frac{1}{5}\log\left|\frac{\sin x+3}{2\sin x+1}\right|+c$

c) $\frac{2}{5}\log\left|\frac{2\sin x+1}{\sin x+3}\right|+c$ d) $\frac{2}{5}\log\left|\frac{\sin x+3}{2\sin x+1}\right|+c$

117. $\int \frac{8}{(x+2)\left(x^2+4\right)}dx =$

a) $\log|x+2|+\frac{1}{2}\log|x^2+4|-\tan^{-1}\left(\frac{x}{2}\right)+c$ b) $\log|x+2|-\frac{1}{2}\log|x^2+4|+\tan^{-1}\left(\frac{x}{2}\right)+c$

c) $\log|x+2|-\frac{1}{2}\log|x^2+4|-\tan^{-1}\left(\frac{x}{2}\right)+c$ d) $\log|x+2|+\frac{1}{2}\log|x^2+4|+\tan^{-1}\left(\frac{x}{2}\right)+c$

[MHT - CET 2024]

118. $\int \frac{x^4+x^2+1}{x^2-x+1}dx =$

a) $\frac{x^3}{3}+\frac{x^2}{2}+x+c$ b) $\frac{x^3}{3}+\frac{x^2}{2}-x+c$ c) $\frac{x^3}{3}-\frac{x^2}{2}+x+c$ d) $\frac{x^3}{3}-\frac{x^2}{2}-x+c$

119. $\int \frac{x^3-7x+6}{x^2+3x}dx =$

a) $\frac{x^2}{2}+3x+2\log x+c$ b) $\frac{x^2}{2}+3x-2\log x+c$

c) $\frac{x^2}{2}-3x+2\log x+c$ d) $\frac{x^2}{2}-3x-2\log x+c$

120. If $f(x)=\frac{x}{x+1}$, $x\neq -1$ and $(fof)(x)=F(x)$, then $\int F(x)\,dx =$

a) $\frac{x}{2}-\frac{1}{2}\log|2x+1|+c$ b) $\frac{x}{2}+\frac{1}{2}\log|2x+1|+c$

c) $\frac{x}{2}-\frac{1}{4}\log|2x+1|+c$ d) $\frac{x}{2}+\frac{1}{4}\log|2x+1|+c$

145. $\int \frac{\log\sqrt{x}}{3x}\,dx =$

a) $\frac{1}{12}(\log x)^2 + c$ b) $\frac{2}{3}(\log x)^2 + c$ c) $\frac{1}{3}\log\sqrt{x} + c$ d) $\frac{2}{3}\left(\log\sqrt{x}\right)^2 + c$

146. If $\int \frac{\log\left(x+\sqrt{1+x^2}\right)}{\sqrt{1+x^2}}\,dx = \frac{1}{2}(f(x))^2 + c$, then $f(x) =$

a) $\log\left(\sqrt{1+x^2}\right)$ b) $-\log\left(\sqrt{1+x^2}\right)$ c) $\log\left(x+\sqrt{1+x^2}\right)$ d) $-\log\left(x+\sqrt{1+x^2}\right)$

147. $\int \frac{x^8 - x^2}{\left(x^{12}+3x^6+1\right)\tan^{-1}\left(x^3+\frac{1}{x^3}\right)}\,dx =$

a) $\log\left(\left|\tan^{-1}\left(x^3+\frac{1}{x^3}\right)\right|\right)^{\frac{1}{3}} + c$ b) $\log\left(\left|\tan^{-1}\left(x^3+\frac{1}{x^3}\right)\right|\right)^{\frac{1}{2}} + c$

c) $\log\left(\left|\tan^{-1}\left(x^3+\frac{1}{x^3}\right)\right|\right)^{3} + c$ d) $\log\left(\left|\tan^{-1}\left(x^3+\frac{1}{x^3}\right)\right|\right) + c$

148. If $\int \tan(x-\alpha)\tan(x+\alpha)\tan 2x\,dx = p\log|\sec 2x| + q\log|\sec(x+\alpha)| + r\log|\sec(x-\alpha)| + c$, then $p+q+r =$

a) $-\frac{5}{2}$ b) $-\frac{3}{2}$ c) $\frac{5}{2}$ d) $\frac{3}{2}$

149. $\int \operatorname{cosec}(x-a)\operatorname{cosec} x\,dx =$

a) $\operatorname{cosec} a \log|\sin(x-a)\operatorname{cosec} x| + c$ b) $\operatorname{cosec} a \log|\sin(x-a)\sin x| + c$

c) $\operatorname{cosec} a \log|\operatorname{cosec}(x-a)\sin x| + c$ d) $\sin a \log|\sin(x-a)\sin x| + c$

150. If $\int \frac{2-\tan x}{3+\tan x}\,dx = \frac{1}{2}(\alpha x + \log|\beta\sin x + \gamma\cos x|) + c$, where c is a constant of integration, then $\alpha + \frac{\gamma}{\beta} =$

a) $\frac{1}{6}$ b) 3 c) 4 d) 7

151. If $\int \frac{4e^x - 25}{2e^x - 5}\,dx = Ax + B\log|2e^x - 5| + c$, then

a) A = 5, B = 3 b) A = 5, B = −3 c) A = −5, B = 3 d) A = −5, B = −3

177. $\int \frac{e^{\tan^{-1}x}}{1+x^2}\left(\left(\sec^{-1}\sqrt{1+x^2}\right)^2+\cos^{-1}\left(\frac{1-x^2}{1+x^2}\right)\right)dx =$

a) $e^{\tan^{-1}x}(\tan^{-1}x)^2+c$

b) $e^{\tan^{-1}x}(\tan^{-1}x)+c$

c) $e^{\tan^{-1}x}(\cot^{-1}x)^2+c$

d) $e^{\tan^{-1}x}(\cot^{-1}x)+c$

178. $\int \frac{1+\sin(\log x)}{1+\cos(\log x)}dx =$

a) $x\tan\left(\log\left(\frac{x}{2}\right)\right)+c$

b) $x\tan\left(\frac{\log x}{2}\right)+c$

c) $x^2\tan\left(\frac{\log x}{2}\right)+c$

d) $x^3\log\left(\frac{\tan x}{2}\right)+c$

179. $\int \left(1+x-\frac{1}{x}\right)e^{x+\frac{1}{x}}dx =$

a) $(x-1)e^{x+\frac{1}{x}}+c$ b) $xe^{x+\frac{1}{x}}+c$ c) $(x+1)e^{x+\frac{1}{x}}+c$ d) $-xe^{x+\frac{1}{x}}+c$

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

a) $\frac{9}{7}\tan^{-1}\left(\frac{x}{2}\right)+\frac{5}{7\sqrt{3}}\log\left(\frac{x-\sqrt{3}}{x+\sqrt{3}}\right)+c$

b) $\frac{9}{7}\tan^{-1}\left(\frac{x}{2}\right)-\frac{5}{7\sqrt{3}}\log\left(\frac{x-\sqrt{3}}{x+\sqrt{3}}\right)+c$

c) $\frac{9}{14}\tan^{-1}\left(\frac{x}{2}\right)+\frac{5}{7\sqrt{3}}\log\left(\frac{x-\sqrt{3}}{x+\sqrt{3}}\right)+c$

d) $\frac{9}{14}\tan^{-1}\left(\frac{x}{2}\right)+\frac{5}{14\sqrt{3}}\log\left(\frac{x-\sqrt{3}}{x+\sqrt{3}}\right)+c$

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

a) $\frac{2}{9}\log|x-1|-\frac{1}{3(x-1)}-\frac{2}{9}\log|x+2|+c$

b) $\frac{2}{9}\log|x-1|-\frac{1}{3(x-1)}+\frac{2}{9}\log|x+2|+c$

c) $\frac{2}{9}\log|x-1|+\frac{1}{3(x-1)}-\frac{2}{9}\log|x+2|+c$

d) $\frac{2}{9}\log|x-1|+\frac{1}{3(x-1)}+\frac{2}{9}\log|x+2|+c$

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

a) $\log\left|\frac{xe^x}{1+xe^x}\right|+\frac{1}{1+xe^x}+c$

b) $\log\left|\frac{xe^x}{1+xe^x}\right|-\frac{1}{1+xe^x}+c$

c) $-\log\left|\frac{xe^x}{1+xe^x}\right|+\frac{1}{1+xe^x}+c$

d) $-\log\left|\frac{xe^x}{1+xe^x}\right|-\frac{1}{1+xe^x}+c$

205. $\int \frac{x}{(x-1)(x-2)}\,dx =$

a) $\log\left|\frac{x-1}{x-2}\right|+c$ b) $\log\left|\frac{x-2}{x-1}\right|+c$ c) $\log\left|\frac{x-2}{(x-1)^2}\right|+c$ d) $\log\left|\frac{(x-2)^2}{x-1}\right|+c$

206. If $\int \frac{2x^2+3}{(x^2-1)(x^2-4)}\,dx = \log\left(\left(\frac{x-2}{x+2}\right)^a\left(\frac{x+1}{x-1}\right)^b\right)+c$, then

a) $a=\frac{11}{12}, b=\frac{5}{6}$ b) $a=\frac{11}{12}, b=-\frac{5}{6}$ c) $a=-\frac{11}{12}, b=\frac{5}{6}$ d) $a=-\frac{11}{12}, b=-\frac{5}{6}$

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

a) $\frac{1}{3}\log\left(\frac{(x^2+4)^2}{\sqrt{x^2+1}}\right)+c$ b) $\log\left(\frac{(x^2+4)^2}{\sqrt{x^2+1}}\right)+c$

c) $3\log\left(\frac{(x^2+4)^2}{\sqrt{x^2+1}}\right)+c$ d) $\frac{2}{3}\log\left(\frac{(x^2+4)^2}{\sqrt{x^2+1}}\right)+c$

208. $\int \frac{dx}{2e^{2x}+3e^x+1} =$

a) $x+\log(e^x+1)-2\log(2e^x+1)+c$ b) $x-\log(e^x+1)+4\log(2e^x+1)+c$

c) $x+\log(e^x+1)-4\log(2e^x+1)+c$ d) $x-\log(e^x+1)+2\log(2e^x+1)+c$

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

a) $\frac{x^2}{2}-2x+3\log(x+1)+\frac{1}{x+1}+c$ b) $\frac{x^2}{2}+2x-3\log(x+1)+\frac{1}{x+1}+c$

c) $\frac{x^2}{2}-2x+3\log(x+1)-\frac{1}{x+1}+c$ d) $\frac{x^2}{2}-2x-3\log(x+1)-\frac{1}{x+1}+c$

210. If $\int \frac{x^4+1}{x(x^2+1)^2}\,dx = a\log x+\frac{b}{1+x^2}+c$, then $a-b=$

a) -1 b) 0 c) 1 d) 2

211. If $\int \frac{2x+3}{(x-1)(x^2+1)}\,dx = \log\left|(x-1)^{\frac{5}{2}}(x^2+1)^a\right|-\frac{1}{2}\tan^{-1}x+c$, then $a=$

a) $\frac{5}{4}$ b) $-\frac{5}{3}$ c) $-\frac{5}{6}$ d) $-\frac{5}{4}$

212. Let $I=\int \frac{dx}{(x-1)^{\frac{11}{13}}(x+15)^{\frac{15}{13}}}$, then I is **[JEE Main 2025]**

a) $\frac{13}{32}\left(\frac{x-1}{x+15}\right)^{\frac{2}{13}}+c$ b) $\frac{32}{13}\left(\frac{x-1}{x+15}\right)^{\frac{2}{13}}+c$ c) $\frac{1}{32}\left(\frac{x+15}{x-1}\right)^{\frac{2}{13}}+c$ d) $\frac{13}{32}\left(\frac{x+15}{x-1}\right)^{\frac{15}{13}}+c$

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190. $\int \sin^5 x\,dx =$

a) $\cos x+\frac{2}{3}\cos^3 x-\frac{1}{5}\cos^5 x+c$

b) $\cos x+\frac{2}{3}\cos^3 x+\frac{1}{5}\cos^5 x+c$

c) $-\cos x+\frac{2}{3}\cos^3 x-\frac{1}{5}\cos^5 x+c$

d) $\cos x-\frac{2}{3}\cos^3 x+\frac{1}{5}\cos^5 x+c$

191. $\int \sec^{\frac{2}{3}} x\cdot \operatorname{cosec}^{\frac{4}{3}} x\,dx =$

a) $3\tan^{-\frac{1}{3}} x+c$ b) $-3\tan^{-\frac{1}{3}} x+c$ c) $-3\cot^{-\frac{1}{3}} x+c$ d) $-\frac{3}{4}\tan^{-\frac{4}{3}} x+c$

192. $\int \frac{\sqrt{\tan x}}{\sin x\cos x}\,dx =$

a) $2\sqrt{\sec x}+c$ b) $2\sqrt{\tan x}+c$ c) $\frac{2}{\sqrt{\tan x}}+c$ d) $\frac{2}{\sqrt{\sec x}}+c$

193. If $\int \tan^4 x\,dx = a\tan^3 x + b\tan x + cx + k$, where k is the constant of integration, then $a - b + c =$

a) $\frac{7}{3}$ b) $\frac{5}{3}$ c) $\frac{4}{3}$ d) $\frac{1}{3}$

194. $\int \frac{(5\sin x-2)\cos x}{5-4\sin x-\cos^2 x}\,dx =$

a) $\log(5\sin x-2)+c$

b) $5\log(5\sin x-2)+\frac{8}{\sin x-2}+c$

c) $\log(5\sin x-2)+\frac{8}{\sin x-2}+c$

d) $\log(5\sin x-2)+\frac{1}{\sin x-2}+c$

195. $\int \frac{\sin 2x}{(a+b\cos x)^2}\,dx =$

a) $\frac{2}{a^2}\left(\log(a+b\cos x)-\frac{a}{a+b\cos x}\right)+c$

b) $-\frac{1}{a^2}\left(\log(a+b\cos x)+\frac{a}{a+b\cos x}\right)+c$

c) $-\frac{2}{b^2}\left(\log(a+b\cos x)+\frac{a}{a+b\cos x}\right)+c$

d) $-\frac{2}{b^2}\left(\log(a+b\cos x)-\frac{a}{a+b\cos x}\right)+c$

196. If $A=\begin{bmatrix} a & 0 & 0\\ 0 & b & 0\\ 0 & 0 & c\end{bmatrix}$, where $a=7^x$, $b=7^{7^x}$, $c=7^{7^{7^x}}$, then $\int |A|\,dx =$

a) $\frac{7^{7^x}}{(\log 7)^3}+k$ b) $\frac{7^{7^x}}{\log 7}+k$ c) $\frac{7^{7^{7^x}}}{(\log 7)^3}+k$ d) $7^{7^{7^x}}(\log 7)^3+k$

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

a) $x+\log|e^x+1|+c$

b) $x-\log|e^x+1|+c$

c) $\log|e^x-1|+x+c$

d) $\log|e^x-1|-x+c$

130. $\int \frac{x^2+1}{(x+1)^2}\,dx =$

a) $x-2\log|x+1|-\frac{1}{x+1}+c$

b) $x-\log|x+1|-\frac{2}{x+1}+c$

c) $x-\log|x+1|-\frac{x}{x+1}+c$

d) $x-2\log|x+1|-\frac{2}{x+1}+c$

131. $\int \frac{x^2}{(a+bx)^2}\,dx =$

a) $\frac{1}{b^3}\left(a+bx+2a\log|a+bx|+\frac{a^2}{a+bx}\right)+c$

b) $\frac{1}{b^3}\left(a+bx-2a\log|a+bx|+\frac{a^2}{a+bx}\right)+c$

c) $\frac{1}{b^3}\left(a+bx+2a\log|a+bx|-\frac{a^2}{a+bx}\right)+c$

d) $\frac{1}{b^3}\left(a+bx-2a\log|a+bx|-\frac{a^2}{a+bx}\right)+c$

132. $\int \frac{dx}{\left((x-1)^3(x+2)^5\right)^{\frac{1}{4}}} =$

a) $\frac{4}{3}\left(\frac{x-1}{x+2}\right)^{\frac{1}{4}}+c$ b) $\frac{4}{3}\left(\frac{x+1}{x+2}\right)^{\frac{1}{4}}+c$ c) $\frac{4}{3}\left(\frac{x+1}{x-2}\right)^{\frac{1}{4}}+c$ d) $\frac{4}{3}\left(\frac{x-1}{x+3}\right)^{\frac{1}{4}}+c$

133. $\int \frac{dx}{x^2\left(x^4+1\right)^{\frac{3}{4}}} =$

a) $\left(1+\frac{1}{x^4}\right)^{\frac{1}{4}}+c$ b) $\left(1+\frac{1}{x^4}\right)^{-\frac{1}{4}}+c$ c) $-\left(1+\frac{1}{x^4}\right)^{\frac{1}{4}}+c$ d) $-\left(1+\frac{1}{x^4}\right)^{-\frac{1}{4}}+c$

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

a) $\log\left(x^2+\frac{1}{x}\right)+c$ b) $-\log\left(x^2+\frac{1}{x}\right)+c$ c) $\frac{1}{2}\log\left(x^2+\frac{1}{x}\right)+c$ d) $-\frac{1}{2}\log\left(x^2+\frac{1}{x}\right)+c$

135. $\int \frac{\operatorname{cosec} x}{\cos^2\left(1+\log\left(\tan\left(\frac{x}{2}\right)\right)\right)}\,dx$

a) $\tan\left(1+\log\left(\tan\left(\frac{x}{2}\right)\right)\right)+c$

b) $2\tan\left(1+\log\left(\tan\left(\frac{x}{2}\right)\right)\right)+c$

c) $\tan\left(\tan\left(\frac{x}{2}\right)\right)+c$

d) $2\tan\left(\tan\left(\frac{x}{2}\right)\right)+c$

136. If $f(x)=\sqrt{\tan x}$ and $g(x)=\sin x\cos x$, then $\int \frac{f(x)}{g(x)}\,dx =$

a) $\sqrt{\tan x}+c$ b) $2\sqrt{\tan x}+c$ c) $-\sqrt{\tan x}+c$ d) $-2\sqrt{\tan x}+c$