WHY WAS e^{x^2} TURNED DOWN FOR MEMBERSHIP TO THE EXCLUSIVE ANTI-DERIVATIVE CLUB?

Find the integral directly or decide which integration technique would be appropriate.

1) $\int \frac{dx}{x^2+1}$	2) $\int \frac{2x\,dx}{x^2+1}$	3) $\int \frac{dx}{x+1}$	4) $\int 2xe^{x^2}dx$
5) $\int \frac{1}{x^2}e^{1/x}dx$	6) $\int xe^{x}dx$	7) $\int 2x\sin(x^2)dx$	8) $\int \frac{dx}{\sqrt{1-x^2}}$
9) $\int \frac{x+3}{x^2-1}dx$	10) $\int \frac{2x}{x^2-1}dx$	11) $\int \frac{x^2-2x-3}{x-1}dx$	12) $\int \ln(x)dx$
13) $\int \sin^2(x)\cos(x)dx$	14) $\int \sin^2(x)dx$	15) $\int \csc^2(x)dx$	16) $\int \tan^5(x)\sec^2(x)dx$
17) $\int \frac{x+3}{(x-1)^2}dx$	18) $\int e^{x^2}dx$	19) $\int \left(\frac{2+x+x^2}{x}\right)dx$	20) $\int e^{x}\cos(x)dx$
21) $\int \frac{2x\,dx}{\sqrt{1-x^2}}$	22) $\int \frac{x+1}{x}dx$	23) $\int \frac{x}{x+1}dx$	24) $\int \frac{2x+1}{x^2+1}dx$

Integration results or techniques.

A. $\ln\lvert x+1\rvert + k$	**C.** $\arcsin(x) + k$	**D.** $\arctan(x) + k$	**E.** $-\cot(x) + k$
E. partial fractions $\frac{A}{x-1} + \frac{B}{x+1}$	**G.** partial fractions $\frac{A}{x-1} + \frac{B}{(x-1)^2}$	**H.** rewrite as $\frac{2x}{x^2+1} + \frac{1}{x^2+1}$	**I.** integration by parts $u = x \quad dv = e^x dx$
J. integration by parts $u = x \quad dv = \ln(x)dx$	**K.** integration by parts $u = \ln(x) \quad dv = dx$	**L.** integration by parts $u = e^x \quad dv = \cos(x)dx$	**N.** substitution: $u = x^2$
O. substitution: $u = x^2 + 1$	**R.** substitution: $u = x^2 - 1$	**T.** substitution: $u = 1 - x^2$	**T.** substitution: $u = 1/x$
U. substitution: $u = \tan(x)$	**Y.** divide by: $x - 1$	**E.** divide by: x	**H.** substitution: $u = \sin(x)$
K. substitution: $u = \cos(x)$	**N.** substitute: $\sin^2(x) = \frac{1-\cos(2x)}{2}$	**T.** substitution: $u = x+1$, and $u-1 = x$ then divide by u	**W.** no technique works

5	24	9	11

12	14	15	18

13	22

8	2	16	20	1	4

,

21

6	7	23	19	17	10	3	23	22