Table 1. Correctness of different models for integrals evaluation

Question	GPT4	GPT3.5	GPT3.5 w/ FT	Davinci w/ FT
$\int e^{5x}\,dx$	Yes	Yes	Yes	Yes
$\int 2e^{2x}\,dx$	Yes	Yes	Yes	Yes
$\int_1^2 \frac{1}{(3-5x)^2}\,dx$	Yes	No	No	No
$\int \frac{x}{\sqrt{1-4x^2}}\,dx$	Yes	Yes	Yes	No
$\int \sqrt{1+x^2}x^5\,dx$	No	No	No	No
$\int_0^4 \sqrt{2x+1}\,dx$	Yes	Yes	Yes	No
$\int_1^e \frac{ln\,x}{x}\,dx$	Yes	Yes	Yes	No
$\int x\sqrt{1-x^2}\,dx$	Yes	Yes	Yes	Yes
$\int x^2 e^{x^3}\,dx$	Yes	Yes	Yes	Yes
$\int sin\,t\sqrt{1+cos\,t}\,dt$	Yes	No	Yes	No
$\int_0^1 cos\left(\frac{\pi t}{2}\right)\,dt$	Yes	No	No	No
$\int sec^2 2\theta\,d\theta$	Yes	Yes	Yes	No
$\int \frac{1}{5-3x}\,dx$	Yes	Yes	Yes	No
$\int y^2(4-y^3)^{\frac{2}{3}}\,dy$	Yes	Yes	Yes	No
$\int xe^{-x^2}\,dx$	Yes	Yes	Yes	Yes
$\int x^2\sqrt{x^3+1}\,dx$	Yes	Yes	Yes	No
$\int sin^2\theta cos\,\theta\,d\theta$	Yes	Yes	Yes	No
$\int \frac{x^3}{x^4-5}\,dx$	Yes	Yes	Yes	No
$\int \frac{1}{x^2}\sqrt{1+\frac{1}{x}}\,dx$	Yes	Yes	Yes	No
$\int \frac{cos\sqrt{t}}{\sqrt{t}}\,dt$	Yes	Yes	Yes	No
$\int z\sqrt{z-1}\,dz$	Yes	No	Yes	No
$\int (5-3x)^{10}\,dx$	Yes	Yes	Yes	No
$\int t^3 e^{-t^4}\,dt$	Yes	Yes	Yes	Yes
$\int \frac{cos\,\theta}{1+sin\,\theta}\,d\theta$	Yes	Yes	Yes	No
$\int \frac{z^2}{z^3+1}\,dz$	Yes	Yes	Yes	No
$\int cos^3\theta sin\,\theta\,d\theta$	Yes	Yes	Yes	No
$\int \frac{e^u}{(1-e^u)^2}\,du$	Yes	Yes	Yes	No
$\int \frac{sin\frac{1}{x}}{x^2}\,dx$	Yes	Yes	No	No
$\int \frac{a+bx^2}{\sqrt{3ax+3x^3}}\,dx$	Yes	No	No	No
$\int \frac{t+1}{3t^2+6t-5}\,dx$	Yes	No	Yes	Yes
$\int \frac{(ln\,x)^2}{x}\,dx$	Yes	Yes	Yes	Yes

Table 2. Correctness of different models for integrals evaluation

Question	GPT4	GPT3.5	GPT3.5 w/ FT	Davinci w/ FT
$\int (x - \frac{1}{x^2})(x^2 + \frac{2}{x})^5 \, dx$	Yes	Yes	Yes	No
$\int \frac{sec^2\theta}{tan\theta} \, d\theta$	Yes	Yes	Yes	No
$\int \frac{(arctan\,x)^2}{x^2+1} \, dx$	Yes	Yes	Yes	No
$\int \frac{1}{(x^2+1)arctan\,x} \, dx$	Yes	Yes	Yes	No
$\int 5^t sin(5^t) \, dt$	Yes	Yes	Yes	No
$\int sin\,x\,sin(cos\,x) \, dx$	Yes	Yes	Yes	No
$\int sec^2\theta\,tan^3\theta \, d\theta$	Yes	Yes	Yes	No
$\int x\sqrt{x+2} \, dx$	Yes	Yes	Yes	No
$\int \frac{2^t}{2^t+3} \, dt$	Yes	Yes	Yes	No
$\int \frac{1+x}{1+x^2} \, dx$	Yes	No	No	No
$\int_0^1 cos(\frac{\pi t}{2}) \, dt$	Yes	Yes	Yes	No
$\int_0^1 \sqrt[3]{1+7x} \, dx$	Yes	Yes	Yes	No
$\int_1^2 \frac{e^{\frac{1}{x}}}{x^2} \, dx$	Yes	Yes	Yes	No
$\int_1^4 \frac{\sqrt{2+\sqrt{x}}}{\sqrt{x}} \, dx$	No	No	No	No
$\int_0^1 (3t-1)^{50} \, dt$	Yes	Yes	Yes	No
$\int_0^{\frac{\pi}{6}} \frac{sin\,t}{cos^2\,t} \, dt$	Yes	Yes	Yes	No
$\int_0^4 \frac{x}{\sqrt{1+2x}} \, dx$	No	No	No	No
$\int_1^2 x\sqrt{x-1} \, dx$	Yes	Yes	Yes	No
$\int 2x\sqrt{1+x^2} \, dx$	Yes	Yes	Yes	No
Total 50	47	40	42	8
Success rate	94%	80%	82%	16%