FP3 Integration Bingo

Choose 16 of the below and put into a 4×4 grid

$-\coth(x)$	$\frac{1}{2}(x^3 + 2x^2)^2$	$-\cos(x) + \frac{1}{3}\cos^3(x)$	$\arctan(x)$
$\tan(x) - x$	$\frac{\sin(x^2)}{2}$	$-\text{cosech}(x)$	$-\text{sech}(x)$
$\frac{1}{2}e^{x^2}$	$\frac{1}{4}\cosh(4x + 3)$	$\frac{3}{4}\ln|x^4 + 10|$	$\ln|x + 2| - \ln|x + 3|$
$\frac{1}{4}\sin^4(x)$	$-e^{-x}$	$\frac{1}{20}(4x^2 + 3)^5$	$4\ln|x + 2| + 2\ln|x + 3|$
$\frac{1}{4}(2x + e^{2x})$	$-\frac{1}{2}\ln|\cos(2x)|$	$x - \arctan(x)$	$\frac{1}{2}(x - \sin(x)\cos(x))$
$\frac{1}{\sqrt{2}}\text{arcosh}\left(\frac{x + 3}{3}\right)$	$2\ln(x^2 + 3x + 4)$	$4\ln|x| + 2\ln|x + 1| + \ln|x + 3|$	
$e^{x^2 + x}$	$\frac{1}{8}\ln\left|\frac{x - 4}{x + 4}\right|$	$\frac{1}{\sqrt{2}}\arctan\left(\frac{x + 1}{\sqrt{2}}\right)$	$-\text{cosech}(x)$
$\sqrt{1 - x^2} + x\arcsin(x)$	$\tanh(x)$	$\frac{2}{3}\arctan\left(\frac{x}{3}\right)$	$\text{arsinh}\left(\frac{x}{3}\right)$
$\frac{1}{2}\left(\frac{e^{2x}}{2} - x\right)$	$\sqrt{x}\sqrt{1 + x} - \text{arsinh}(\sqrt{x})$	$5\sqrt{1 + x^2}$	$\frac{1}{2}\ln|x^2 + 9|$
$\frac{3}{14}\sinh^7(2x)$	$\frac{1}{3}\tan(3x)$	$x - \tanh(x)$	$\frac{x}{2}\sqrt{x^2 + 4} - 2\text{arcosh}\left(\frac{x}{2}\right)$
$\frac{4}{3}e^{x^3}$			

Question 1

$$\int \text{cosech}^2(x)\ dx$$

Question 2

$$\int \frac{1}{\sinh(x) + \cosh(x)} \, dx$$

Question 3

$$\int \frac{1}{x^2 + 2x + 3} \, dx$$

Question 4

$$\int (2x+1)e^{(x^2+x)}\,dx$$

Question 5

$$\int \text{cosech}(x) \, \text{coth}(x) \, dx$$

Question 6

$$\int \sin^2(x)\, dx$$

Question 7

$$\int \frac{4x + 6}{x^2 + 3x + 4}\, dx$$

Question 8

$$\int \frac{1}{\sqrt{9 + x^2}} \, dx$$

Question 9

$$\int xe^{x^2}\,dx$$

Question 10

$$\int \frac{1}{x^2 + 5x + 6} \, dx$$

Question 11

$$\int x \cos(x^2) \; dx$$

Question 12

$$\int \text{sech}^2(x) \, dx$$

Question 13

$$\int \arcsin(x)\, dx$$

Question 14

$$\int \frac{1}{\sqrt{12x + 2x^2}} \, dx$$

Question 15

$$\int 2x(4x^2 + 3)^4 \, dx$$

Question 16

$$\int \frac{1}{x^2 - 16}\, dx$$

Question 17

$$\int \cos(x) \sin^3(x) \; dx$$

Question 18

$$\int \frac{1}{1+x^2}\, dx$$

Question 19

$$\int \sinh(4x + 2)dx$$

Question 20

$$\int \sec^2(3x)\ dx$$

Question 21

$$\int (3x^2 + 4x)(x^3 + 2x^2)\, dx$$

Question 22

$$\int \frac{5x}{\sqrt{1+x^2}} \, dx$$

Question 23

$$\int \tan(2x)\ dx$$

Question 24

$$\int 4x^2 e^{x^3} \, dx$$

Question 25

$$\int \tan^2(x) \, dx$$

Question 26

$$\int \frac{x^2}{1 + x^2}\, dx$$

Question 27

$$\int \frac{\cosh(x)}{\sinh^2(x)} \, dx$$

Question 28

$$\int 3 \sinh^6(2x) \cosh(2x) \; dx$$

Question 29

$$\int \tanh^2(x)\, dx$$

Question 30

$$\int e^x \cosh(x)\, dx$$

Question 31

$$\int \frac{2}{9 + x^2} dx$$

Question 32

$$\int \frac{x}{x^2 + 9} \, dx$$

Question 33

$$\int \text{sech}(x)\,\text{tanh}(x)\,dx$$

Question 34

$$\int \frac{6x + 16}{x^2 + 5x + 6}\, dx$$

Question 35

$$\int e^x \sinh(x)\, dx$$

Question 36

$$\int \sqrt{x^2 - 4} \, dx$$

Question 37

$$\int \sin^3(x)\,dx$$

Question 38

$$\int \frac{3x^3}{x^4 + 10} \, dx$$

Question 39

$$\int \sqrt{\frac{x}{x+1}} \, dx$$

Question 40

$$\int \frac{7x^2 + 23x + 12}{x^3 + 4x^2 + 3x} \, dx$$