

FIND THE BINGO**Calculus – e^x and $\ln(x)$ and $\log(x)$** **DIRECTIONS:**

Work any problem below and locate your answer on your bingo card. Circle the answer.

Keep working problems in any order until you have five circled answers in a line -- horizontally, vertically, or diagonally.
WHEN YOU FIND THE BINGO, YOUR WORK IS FINISHED!

Your BINGO Card

$e^{-x}(1-x)$	$2xe^{-x^2}$	$\frac{1}{6}e^{6x} + C$	$4\tan(4x)$	-1
-3	1	$4/(x+1)$	$e^{-x}(x-1)$	x^4
$\frac{1}{4}\tan(4x)$	1 and 2	-2	$\frac{1}{2}\ln(2x+1) + C$	3
$-2xe^{-x^2}$	$\frac{1}{2}\ln(x^2+1) + C$	2	$2xe^{x^2}$	$-4\tan(4x)$
$-2xe^{x^2}$	$-4\cot(4x)$	$-e^{\cos x} + C$	$\ln(x^2+1) + C$	$1/(x^2+x)$

Problems to solve:

1. Simplify $e^{\ln x^4}$

2. Evaluate $\log_3 \frac{1}{27}$

3. Solve $9^{\log_3 x} = 4$ for x

4. Solve $3^{x^2-3x} = \frac{1}{9}$ for x

5. If $y = \ln(x+1)^4$, determine $\frac{dy}{dx}$

6. If $y = \ln\left(\frac{x}{1+x}\right)$, determine $\frac{dy}{dx}$

7. If $y = \ln(\cos 4x)$, determine $\frac{dy}{dx}$

8. If $y = e^{-x^2}$, determine $\frac{dy}{dx}$

9. Evaluate $\int e^{6x} dx$

10. Evaluate $\int e^{\cos x} \sin x dx$

11. If $\ln y = x^2$, determine $\frac{dy}{dx}$

12. If $y = xe^{-x}$, determine $\frac{dy}{dx}$

13. If $y = \ln e^x$, determine $\frac{dy}{dx}$

14. Evaluate $\int \frac{xdx}{x^2+1}$

15. Evaluate $\int \frac{dx}{2x+1}$

Many Thanks to Kathy Rivers for retyping this puzzle!