UNIT 29: WORKSHEET

Integration by parts

Problem 1:   Find the anti-derivative of

$$\log(2x)\sqrt{x}$$

Solution:
this is actually a HW problem.

Problem 2:   Find the anti-derivative of
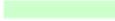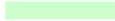
$$x\sin(5x) \ .$$

Solution:
$-x\cos(5x)/5 + \int \cos(5x)/5 = -x\cos(5x)/5 - \sin(5x)/25.$

Problem 3:
Stand and deliver!
Find the anti-derivative of $x^3 \sin(2x)$ using Tic-Tac-Toe!

Differentiate	Integrate	Signs
x^3	$\sin(2x)$	
		$\oplus$
		$\ominus$
		$\oplus$
		$\ominus$

Problem 4: If you want to get into Guinness, see whether you can integrate $\int x^{150} \exp(x) \, dx$

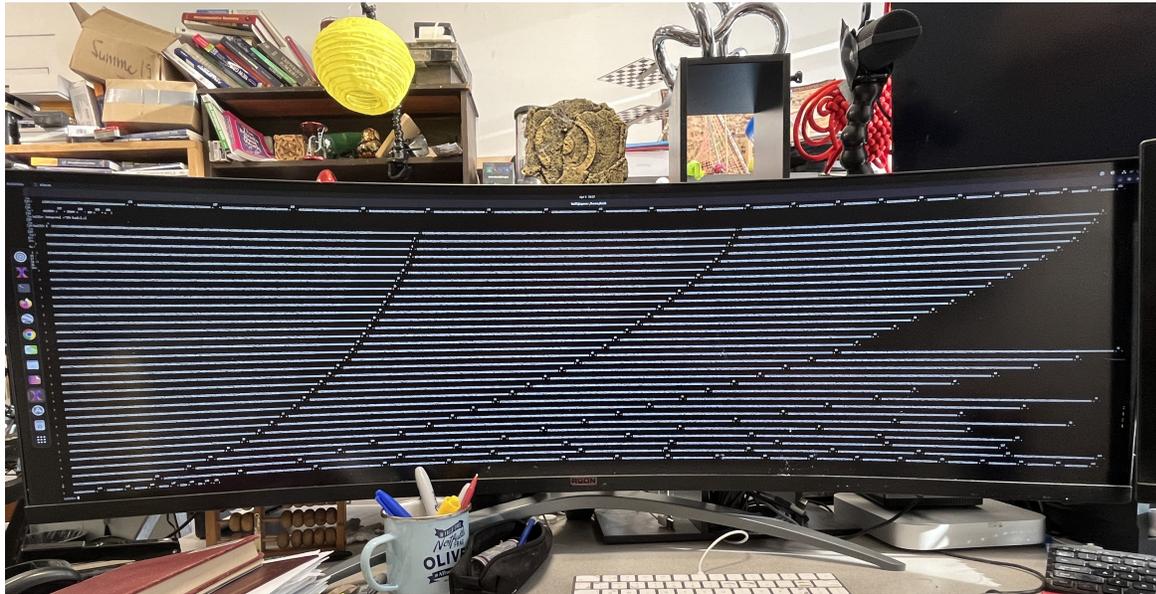Submit to $https://guinnessworldrecords.com$.

FIGURE 1. A screen shot of the integral of $x^{150}e^x$.

FIGURE 2. Guinness

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