

Differentiation problems from right side of slide 102 of 1675 intro slides

- (1) $s(y) = 4ye^{2y}$
- (2) $p(x) = \frac{\log(x^2)}{x}$
- (3) $q(z) = (e^z - z)^3$

Linear algebra review problems

The following two example problems are from MIT Open Courseware, 18.06SC Linear Algebra, Fall 2011 (see ocw.mit.edu):

Problem 1.2: Multiply: $\begin{bmatrix} 1 & 2 & 0 \\ 2 & 0 & 3 \\ 4 & 1 & 1 \end{bmatrix} \begin{bmatrix} 3 \\ -2 \\ 1 \end{bmatrix}$.

Problem 1.3: True or false: A 3 by 2 matrix A times a 2 by 3 matrix B equals a 3 by 3 matrix AB . If this is false, write a similar sentence which is correct.

Matrix Properties question:

The following are possible statements regarding the properties of matrix multiplication in general. Which of the following properties is not guaranteed to hold?

$$A(B * C) = (A * B)C$$

$$A(B + C) = A * B + A * C$$

$$A * B = B * A$$