Answer all questions
Time: One hour

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1. (a) i. Find the equation of a straight line passes through the point (-1, 3) with slope 2.

    ii. Let $A = \begin{pmatrix} 5 & 2 & -1 \\ -1 & 3 & 7 \end{pmatrix}$ and $B = \begin{pmatrix} 4 & -3 & 2 \\ 0 & 7 & -2 \end{pmatrix}$.

    Find the matrix $2A - B$.

   (b) Evaluate the following limits:

    i. $\lim\limits_{x \to \infty} \dfrac{2x + 4}{x - 7}$;

    ii. $\lim\limits_{x \to 3} \dfrac{x^2 - 9}{x^2 - x - 6}$.

2. (a) Differentiate the following functions with respect to the variable x:

    i. $y = x^7(8x^5 + 4)$;

    ii. $y = (4x^3 - 2x + 1)/(3 - 5x^2)$.

(PTO)

(b) Integrate the following with respect to x:

i. $(4x + 3)(2x - 1)$;

ii. $x^5/(x^6 + 2)$.