Algebra – 2022 A2 Nov Math

Solve the inequality $ 2x - 5 > x$.	[4]
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2.	Nov/2022/Paper	_9709_	_21/No.6(a)	
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The polynomial p(x) is defined by

$$p(x) = 12x^3 - 9x^2 + 8x - 4.$$

(a)	Find the quotient when $p(x)$ is divided by $(4x - 3)$ and show that the remainder is 2. [3]
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The solutions of the equation $ 4x - 1 = x + 3 $ are $x = p$ and $x = q$, where $p < q$.
Find the exact values of p and q , and hence determine the exact value of $ p-2 - q-1 $. [5]
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3. Nov/2022/Paper_9709_22/No.2

4.	Nov/2022/Paper	_9709_	_22/No.4
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The polynomial p(x) is defined by

$$p(x) = ax^3 + 23x^2 - ax - 8,$$

where a is a constant. It is given that (2x + 1) is a factor of p(x).

a)	Find the value of a and hence factorise $p(x)$ completely.	[5]
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))	Hence solve the equation $p(e^{4y}) = 0$, giving your answer correct to 3 significant figures.	[2]