

1. June/2023/Paper_9709/21/No.4

The polynomial $p(x)$ is defined by

$$p(x) = 2x^3 + 3x^2 + kx - 30,$$

where k is a constant. It is given that $(x - 3)$ is a factor of $p(x)$.

- (a) Find the value of k . [2]

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- (b) Hence find the quotient when $p(x)$ is divided by $(x - 3)$ and factorise $p(x)$ completely. [3]

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- (c) It is given that a is one of the roots of the equation $p(x) = 0$.

Given also that the equation $|4y - 5| = a$ is satisfied by two real values of y , find these two values of y . [3]

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