

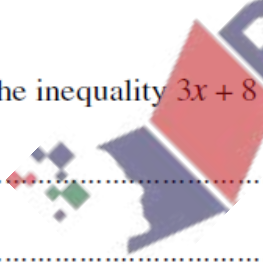
1. **June/2023/Paper_9709/31/No.2**

(a) Sketch the graph of $y = |2x + 3|$.

[1]

(b) Solve the inequality $3x + 8 > |2x + 3|$.

[3]



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The polynomial $x^3 + 5x^2 + 31x + 75$ is denoted by $p(x)$.

- (a) Show that $(x + 3)$ is a factor of $p(x)$. [2]

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- (b) Show that $z = -1 + 2\sqrt{6}i$ is a root of $p(z) = 0$. [3]

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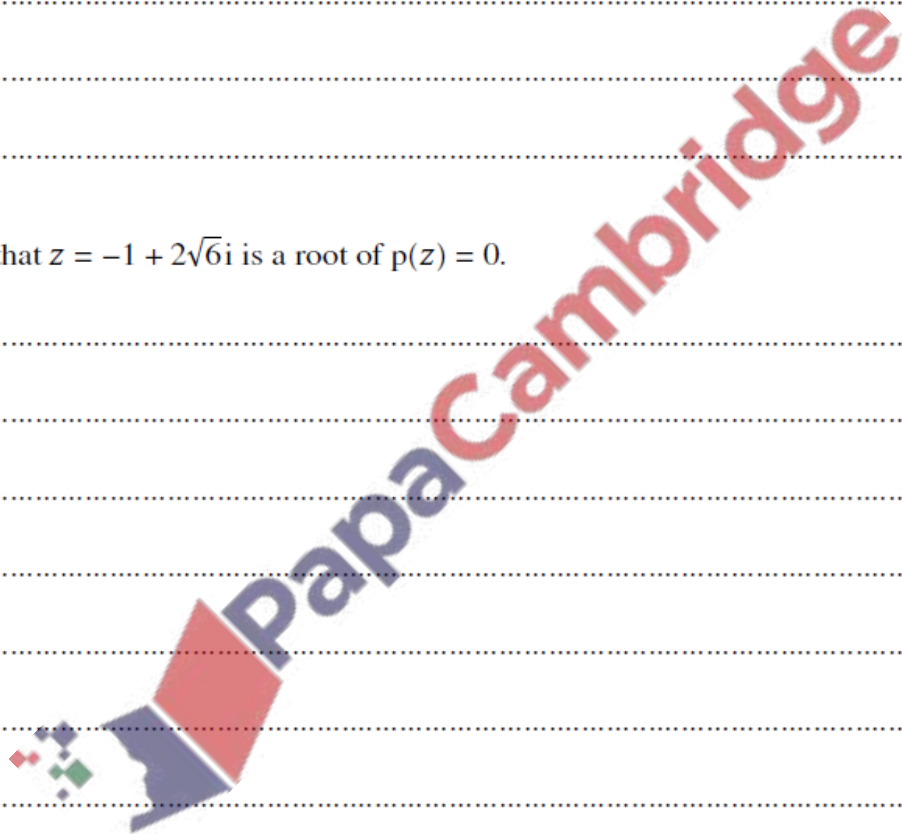
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(c) Hence find the complex numbers z which are roots of $p(z^2) = 0$.

[7]

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