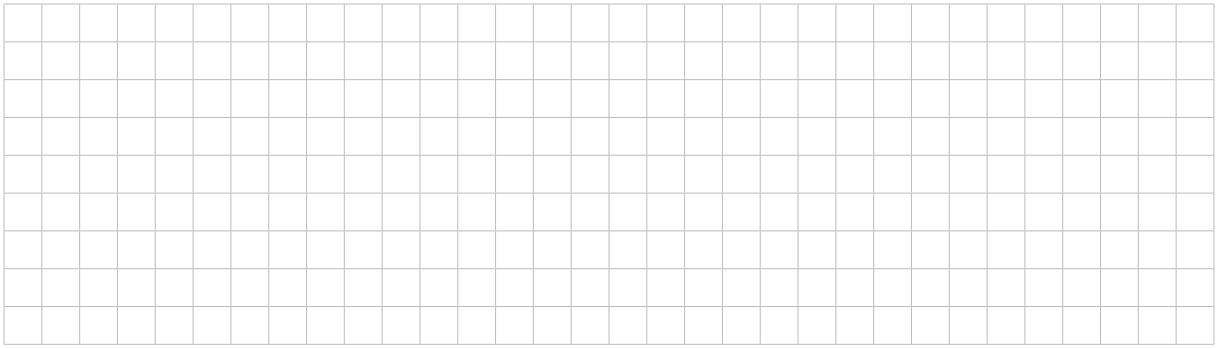
Question 3 (6 marks)

Let $P(x)$ be a real cubic polynomial.

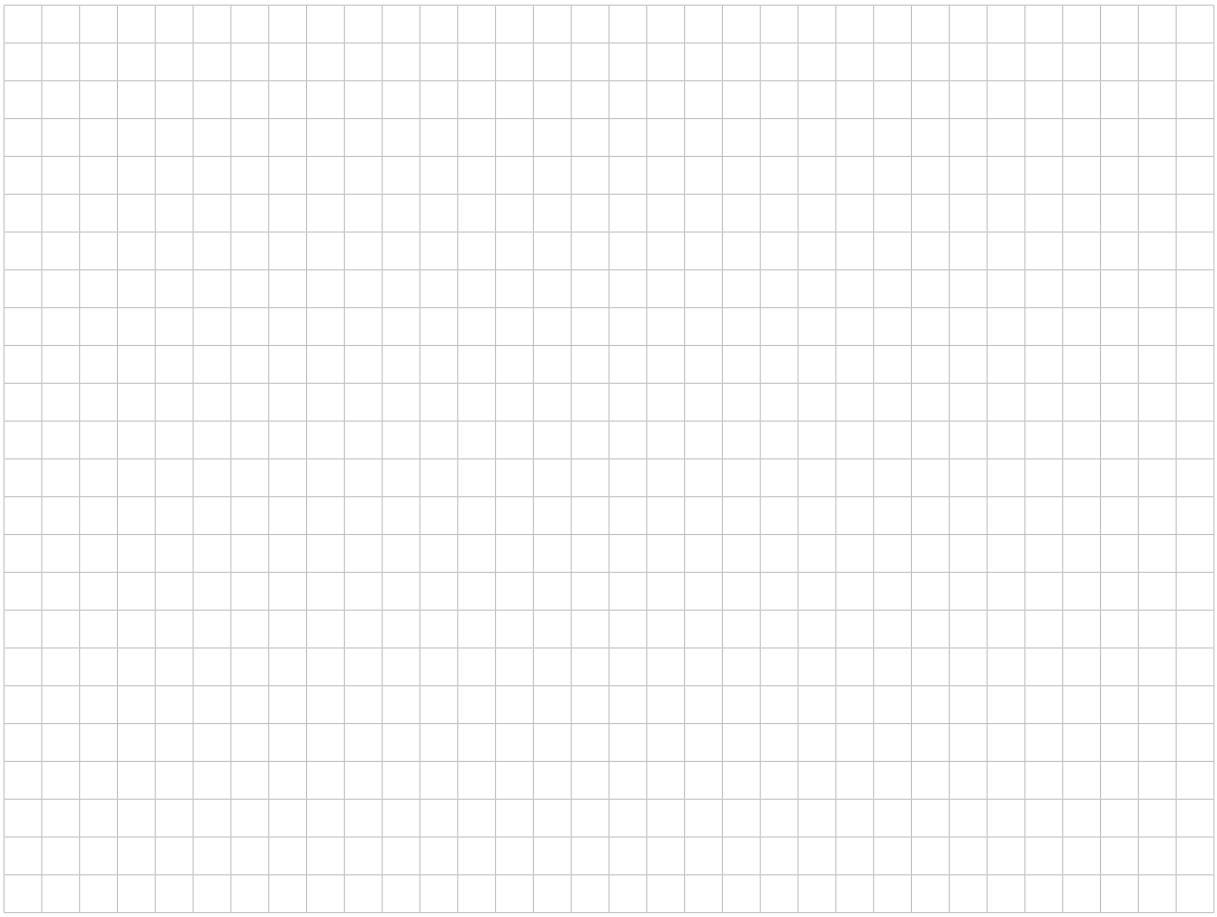
(a) If $2-i$ is a zero of $P(x)$, find a real quadratic factor of $P(x)$.



(2 marks)

(b) When $P(x)$ is divided by $(x-1)$ the remainder is 6, and when $P(x)$ is divided by $(x-2)$ the remainder is 5.

Find $P(x)$.



(4 marks)