M208 12J
Examples for AA1

1 Solve the inequality $\dfrac{x^2-12}{x^2-5x+6} < 2.$

2 Prove that $3^2 > 4n,$ for $n \geq 2.$

3 Use the Binomial Theorem to prove that

$$\left(1+\frac{1}{3n}\right)^n \geq \frac{25}{18} - \frac{1}{18n}, \text{ for } n \geq 1.$$

4 Determine the greatest lower bound of the set

$$E = \left\{2+\frac{5}{n^2} : n = 1, 2, \ldots\right\}.$$