6 **In this question you must show detailed reasoning.**

(a) Solve the inequality $x^2 + x - 6 > 0$, giving your answer in set notation. **[4]**

(b) Solve the equation $x^3 - 7x^{\frac{3}{2}} - 8 = 0$. **[4]**

(c) Find the exact solution of the equation $(3^x)^2 = 3 \times 2^x$. **[5]**