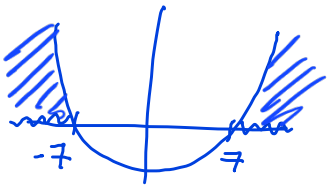
1 Find algebraically the set of values of x for which

$$x^2 - 49 > 0 \quad \textbf{and} \quad 5x^2 - 31x - 72 > 0$$

$x^2 - 49 > 0$

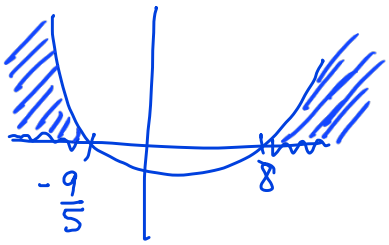
$(x+7)(x-7) > 0$ (1)



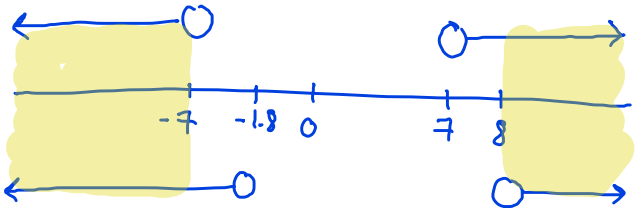
$\therefore$ $x > 7$ or $x < -7$ (1)

$5x^2 - 31x - 72 > 0$

$(x-8)(5x+9) > 0$ (1)



$x > 8$ or $x < -\frac{9}{5}$ (1)



from $x^2 > 49$

from $5x^2 - 31x - 72 > 0$

Solution set is the overlap of the two inequalities, i.e. where there are two lines.

$x < -7, x > 8$ (1)

$x < -7, x > 8$

(Total for Question 1 is 5 marks)