EQUATIONS, INEQUALITIES AND SYSTEMS TEST - 4° ESO

Exercise 1: (1 pto) The difference of two numbers is 3 and the difference of their squares is 69. Find the numbers. **The numbers are 13 and 10**

Exercise 2: (1 pto) Work out:

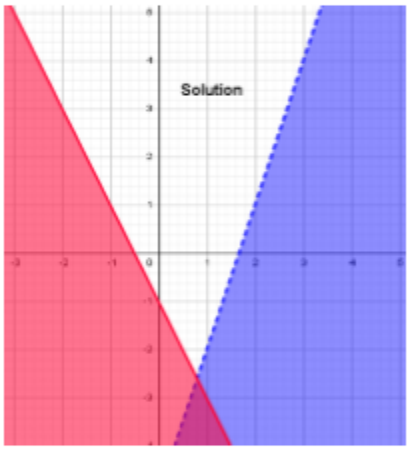
$$\left.\begin{array}{l} xy = 20 \\ x^2 - 3y^2 = 88 \end{array}\right\} \rightarrow (10,2) \text{ and } (-10,-2)$$

Exercise 3: (4 ptos) Work out:

a) $\left.\begin{array}{l} x^2 + 6x + 8 \le 0 \\ 9 - x^2 > 0 \end{array}\right\} \rightarrow x \in (-3,-2]$

b) $\left.\begin{array}{l} x^2 - 4x + 4 > 0 \\ x^2 - 3x \le 0 \end{array}\right\} \rightarrow x \in [0,2) \cup (2,3]$

c) $\left.\begin{array}{l} 3x - y < 5 \\ 2x + y \ge -1 \end{array}\right\}$



d) $3(x-5) + 2x - 7 < 4x + 5(2x+1) \rightarrow x \in (-3, +\infty)$

Exercise 4: (3.25 ptos) Work out:

a) $\sqrt{2-7x} = x + 6 \rightarrow x = -2$

b) $\sqrt{5x+1} - \sqrt{x+6} = 1 \rightarrow x = 3$

c) $\frac{5-6x}{7} = 2 + \frac{(x+2)^2}{3} \rightarrow x = -5, \quad x = \frac{-11}{7}$

Exercise 5: (0.75 ptos) Solve $f(x) \geq 0$, where $f(x)$ is the function given by the graph:

$x \in (-\infty, -2] \cup [0, +\infty)$