Math-1003b Homework #8

Reading

- Section 9.2 and 9.3

Problems

1). Determine the domain for the following function:

$$f(x) = \sqrt{-\frac{(x+5)(4-x)^2}{x(1-x)(x-2)^2}}$$

Express the domain in interval notation.

2). Solve the following inequality, expressing the answer in interval notation:

$$x^2 + 4x \geq 21$$

Now state the answer (don't do any additional work) for the following in interval notation:

$$x^2 + 4x - 21 < 0$$

3). Solve for x (Hint: what kind of equation does this look like?):

$$(x+1)^2 + 3\,|x+1| - 4 = 0$$

4). Smallville, USA has designed their downtown so that their city hall, fire station, and police station all occur on a line. If the fire station is at the point 0 on the line and the police station is at the point 3 on the line, and city hall is twice as far from the fire station as the police station, then can you tell exactly where city hall is on the line? You must explain exactly how you determine this.