## 1. (4pts)

Find the implied domain for  $f(x) = \frac{\sqrt{x^2 - 4x - 5}}{x + 2}$ ,

and evaluate

f(6) if possible.

### 2. (8 pts)

Given A(-2,2) and a line L: 3x + y = 2,

(1)Find a parallel line  $\boldsymbol{M}$  and a perpendicular line  $\boldsymbol{N}$  pass though  $\boldsymbol{A}.$ 

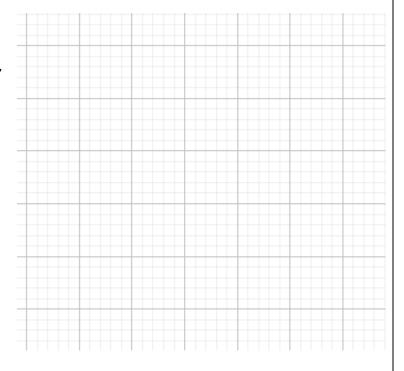
(2)Let  $B(x_2,y_2)$  be the intersection of L and N.

 $C(x_3,y_2)$  is on the line M. What are the coordinates of the B and C?

# 3. (8 pts)

Graph 
$$f(x) = -\frac{3}{2}|x+2| + \frac{1}{2}|x-4|$$
 for the entire

domain and identify (1) when f(x) will be increasing, decreasing or constant. (2) the relative maximums and relative minimums.



## 4. (4 pts)

Sketch f(x), find x and y intercept of f(x) if

$$f(x) = \begin{cases} -x^2 + x - 1, x \le -2\\ -x - 2, x > 5 \end{cases}$$

#### 5. (4 pts)

Graph h(x) based on the given parent function f(x). Identify the transformations.

$$f(x) = \sqrt{x}$$

$$h(x) = \sqrt{4x - 3} + 4$$