

/ pts

Name: \_\_\_\_\_

60'

**WITHOUT THE CALCULATOR**

INDICATE YOUR COMPUTATIONS

SIMPLIFY YOUR ANSWERS AS MUCH AS POSSIBLE

➤ **EXERCISE 1** \_\_\_\_\_ / 11 pts

1) How do you read «  $a^2 < \sqrt{b}$  » ? ...

2) We consider  $A = [-2; \infty[$  and  $B = [-4; 5[$ .

a) How do you read «B » ? « B is ...

b) Determine  $A \cup B =$

c) Determine  $\bar{A} \cap B =$

3) Write with the interval notation :  $\{x \in \mathbb{R} \mid x^2 > 5\} =$

4) Write with the interval notation :  $\{x \in \mathbb{R} \mid -4 < |x| \leq 9\} =$

➤ **EXERCISE 2** \_\_\_\_\_

1) Solve the following equations without using the second degree formula

a)  $64x^2 - 25 = 0$

b)  $x^5 - 4x^3 = 0$

2) "Complete the squares"

a)  $x^2 + 14x - 50 =$

b)  $2x^2 - 12x + 220 =$

3) Fill the blanks so that the following equality is a special product

$$9x^4 - 6x^3 \pm \underline{\hspace{2cm}} = (\underline{\hspace{2cm}} \pm \underline{\hspace{2cm}})^2$$

4) Factorize (as much as you can)  $(x^2 + 4)(x - 2) - 20(x - 2) =$