American University of Beirut Math 203 Quiz I Fall 2006-2007

Time: 70min.

<u>Name</u>..... <u>Student #</u> :.....

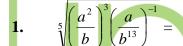
Circle your section number:

Section 1: Th. @ 9:30

Section 2: Th. @ 11:00

(35%) Part I: Multiple choices, with 2. 5 points for each correct answer and -0.5 point penalty.

Circle the correct answer.





D.
$$a^2b$$

2.
$$4^{-3} + \left(\frac{2}{16}\right)^{-2} - \frac{1}{2^6} =$$





$$D.2^{-8}$$

- **3.** The equation of the horizontal line through (-2, 3) is:
 - A. 5x = -10
- B.3y = -6

- C. 3x = 9
- D. 2y = 6
- **4.** The roots of the quadratic equation $3x^2 2x 1 = 0$ are :
 - A. $\frac{-1}{3}$ and 1 B. 3 and -1
- C. -3 and 1 D. $\frac{1}{3}$ and -1
- 5. The coordinates of the midpoint of the line segment joining the two points A(2,5) and B(6,-3) are:
 - A. (4, 1)
- B. (4, -1)

- C.(1,4)
- D. (1-4)

- **6.** The distance between the two points A(2,0) and B(2,-3) is
 - A. 9

B. 4

- C. 16
- D. 3

- 7. $\sum_{2}^{4} x(x-3)^2 =$
 - A. 2

B.-2

C.6

- D.-6
- **8.** The slope m and the y-intercept of 5x + 3y = 30 are :
 - A. m = 5 and (6,0)

B. $m = \frac{-5}{3}$ and (0,10)

B. C. m = 5 and (0,10)

D. m= $\frac{-3}{5}$ and (6,0)

- **9.** $\left(\left((-2)^{-3}\right)^{\frac{1}{5}}\right)^{10}$ is
 - $A.2^6$
- B. $\frac{1}{2^6}$
- $C. 2^{-6}$
- D. impossible

- **10.** $-\left(\frac{1}{a^{-1}}\right)^{-2} =$
 - A. $-a^{\dagger}$
- B. $-a^{-2}$
- C. $\frac{-1}{a^2}$
- D. $\frac{1}{a^2}$
- **11.** The graph of the linear equation $2x_1 5x_2 + 3x_3 = 7$ is:
 - A. a straight line
- B. a plane

- C. not defined
- D.the given equation is not a linear equation.
- **12.** The inequality $|x^2 2| = -x$ has
 - A. no solution

B. a unique solution

C. exactly two solutions

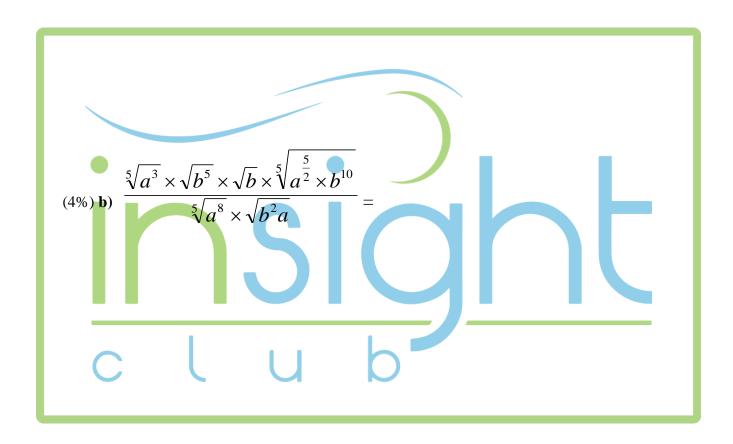
- D. exactly four solutions
- **13.** The inequality $|(x^2 5)(x 1)(2 x)| \le -3$ has
 - A. no solution

- B. a unique solution
- C. infinitely many solutions
- D. exactly two solutions
- **14.** The equation 2x-3=5x-2-3x+1 is

(65%) Part II: Answer each of the following questions. (Explain and show your work on the space provided)

1. Simplify each of the following expressions:

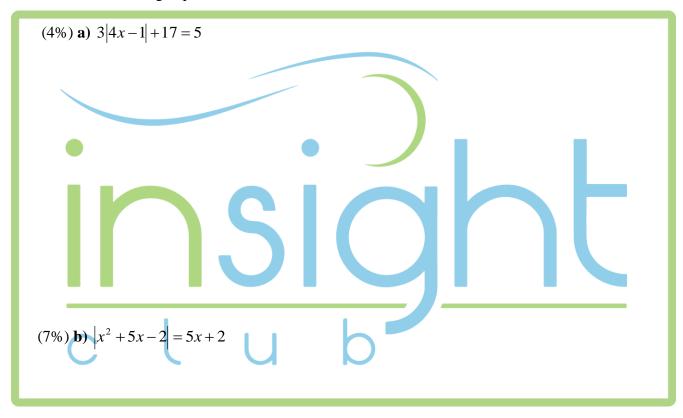
$$(4\%) \mathbf{a}) \left(\frac{4}{5}\right)^{-3} \frac{2^4 \times 5^{-2}}{10} =$$



(4%) c)
$$\sqrt{1+2\sqrt{6+2\sqrt{9+4^2}}}$$

(4%) **d**)
$$\sqrt{25x^8y^4 + 50x^7y^4 + 25x^6y^4} =$$

2. Solve the following equations:



3. Factorize each of the following polynomials **completely**:

(4%) **a**)
$$16x^2 + 10xy - 24x - 15y =$$

$$(4\%) \mathbf{b}) x^{2} + 6x + 9 - y^{2} =$$

$$(4\%) \mathbf{c}) 16x^{5} - 81x =$$

$$(4\%) \mathbf{d}) x^2 + 2x - y^2 - 6y - 8 =$$

4. Solve the following inequalities:

$$(4\%) \mathbf{a}) 2x^2 - 12x + 18 \le 0$$



$$(4\%) \mathbf{c}) - 4(x-1)^2 \ge 0$$

