

**BRONX COMMUNITY COLLEGE**  
of the City University of New York

**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

MATH 05  
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Exam 2  
November 25, 2008

**Directions:** Write your answers in the provided space. To get full credit you *must* show all your work. Simplify your answers whenever possible. Be certain to indicate your final answer clearly. **Each problem is worth 5 points**

1. Evaluate:  $7 - 5(6 - 8) - 2^4 \div 8 \cdot 2$ .

2. Evaluate  $b^2 - 4a$  if  $a = -3$  and  $b = -5$

3. Solve the equation:

$$2(x + 5) = 3(x + 8) - 6$$

4. Solve the equation:

$$|4x - 10| = 30$$

5. Find the equation of the line that passes through the points with coordinates  $(-1, -7)$  and  $(1, -1)$ .

6. Find the point where the lines with equations  $y = 5x - 3$  and  $2x - 4y = 48$  intersect.

7. Solve the following system:

$$\begin{cases} 2x - 3y = 1 \\ 4x + 2y = 10 \end{cases}$$

8. Solve the following system:

$$\begin{cases} 2x + 3y = -3 \\ 4x + 6y = -6 \end{cases}$$

9. Dexter has \$2 all in dimes and quarters. He has a total of 11 coins. How many of each kind of coin does he have?

10. Simplify:  $\left(\frac{3x^4y^3z^5}{-4x^2y^4z^9}\right)^2 (2x^3y^4z^2)^3$

11. Multiply:  $(2x - 5)(3x^2 - 5x + 7)$

12. Multiply:  $(x - 3)^3$

13. 
$$\frac{10a^5b^3 - 4a^3b^2 + 6a^4b^6 + 8ab^2}{2ab^2}$$

14. The area of a rectangle is  $x^2 + x - 6$ . Its length is  $x + 3$ . Find its width.

15. Perform the long division:  $\frac{2x^2 - 5x + 5}{x - 1}$

16. Factor completely:  $3x^3 - 5x^2y + 5y^3 - 3xy^2$

17. Solve:  $2x^3 + 3x^2 - 18x - 27 = 0$

18. Solve:  $x^2 + 4x + 3 = 0$

19. Solve:  $6x^2 + 7x - 5 = 0$

20. Solve  $x^4 - 13x^2 + 36 = 0$