NAME:

BRONX COMMUNITY COLLEGE
of the City University of New York
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MTH05 **Midterm Exam Sample**

Show all work to receive full credit. Use pencil; do not use a calculator. To receive credit for a word problem you must write an equation and solve it. Simplify your answers whenever possible.

1. (5 points) Evaluate the expression $\left(\frac{15}{6}\right) \div \left(\frac{10}{3}\right)$

2. (5 points) Evaluate the expression $\frac{x^2 - y^2}{z}$, where $x = 7$, $y = -5$ and $z = 6$.

3. (5 points) Evaluate the expression $b^2 - 4ac$, where $a = 1$, $b = -4$ and $c = -3$.

4. (5 points) Solve: $5x = 75$

5. (5 points) Solve: $x + 8 = 17$

6. (5 points) Solve: $x - 3 - 2x = 4 + x + 1$

7. (5 points) Solve: $\frac{6}{5}x = 120$

8. (5 points) Solve: $4(x - 3) = x + 9$

9. (5 points) Solve for y: $4x + 3y = 12$

10. (5 points) Solve: $\frac{x - 3}{2} - \frac{x}{5} = \frac{9}{10}$

Solve the following word problems by solving the appropriate equations:

11. (10 points) Jim heads north at 25 miles per hour. One hour later, Sally also heads north from the same spot, at 30 miles per hour. How long will it take for Sally to catch up with Jim?

12. (10 points) The perimeter of a rectangular plot is 50 feet. If its length is 2 feet less than twice its width, what are its dimensions?

13. (10 points) There are three consecutive integers. The sum of the first two is two less than three times the third integer. What are the three integers?

Solve the following inequalities, and graph their solutions:

14. (5 points) $3x + 2 > x - 6$

15. (5 points) $x + 5 \leq 2(x + 4)$

16. (5 points) Add the expressions $4x^2 - 3x + 5$ and $2x^2 - 7$.

17. (5 points) Subtract $3x^2 - 5x + 4$ from $5x^2 + 2x + 2$.