

BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

MATH 05 (JP)
Spring 2015

THIRD EXAMINATION
(DAY) 2 HOURS

Print Name: _____

Directions: You *must* show all your work in the provided space for full credit. Simplify your answer whenever possible. Be certain to indicate your final answers clearly. Each problem is worth 4 points.

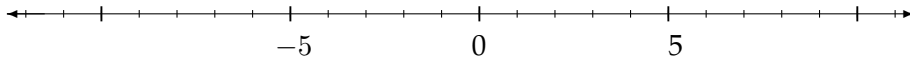
1. Evaluate: (a) $\frac{4}{7}(6^2 - (-6))$ (b) $-6 - 4(2 - 4)$ (c) $\frac{1}{3} - (\frac{1}{9} - 1)$

2. Evaluate the expression $2x^2 - 3x + 4$ for $x = -2$.

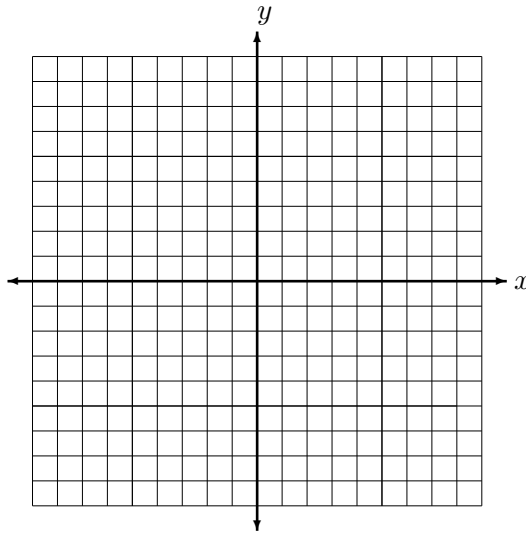
3. Solve for x : $-4(2x - 1) = -5(3x + 2)$

4. Solve for y : $7x + 2y = -14$

5. Solve $3x - 9 \leq 7x - 5$ and (a) graph the solution set, (b) express the solution set in interval notation.



6. Sketch the graph of $2x - 3y = 6$. Show the x and y intercepts.



7. Suppose $(2, 3)$ and $(-2, -5)$ are points on a straight line.

a) Find the slope of the line through these points.

b) Find an equation for the line through these points.

8. Solve for x :
$$\begin{cases} 2x + 4y = 3 \\ 3x + -5y = 4 \end{cases}$$

9. Write in Scientific Notation: (a) $8 \times 10^{-4} \times 6 \times 10^2$ (b) $\frac{3 \times 10^7}{8 \times 10^3}$

10. Simplify: $(4x^2 - 8x - 9) - (-2x^2 - 3x + 4)$

11. Simplify: $\frac{-9x^4 + 9x^3 - 42x^2}{3x^2}$

12. Factor completely: (a) $3x^2 - 9x$ (b) $x^2 - 2x - 48$

13. Factor completely: (a) $x^2 - 64$ (b) $3x^3 - 27x$

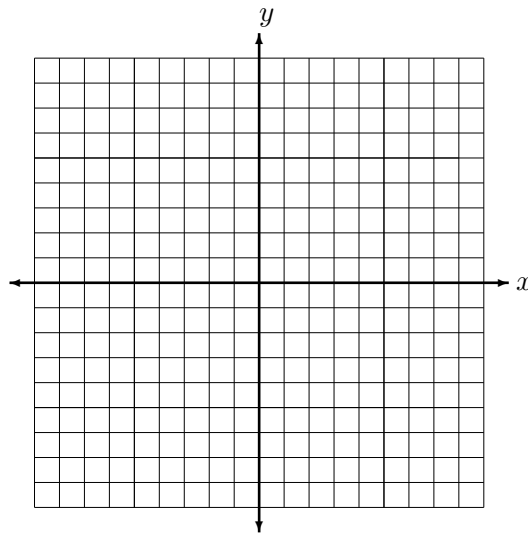
14. The sum of two numbers is 900. One number is three more than twice the other. Find the two numbers.
15. Subtract the polynomial $8b^3 + 7b^2 - 6b + 7$ from the polynomial $4b^3 - 2b^2 - 5b + 10$.
16. Multiply and simplify: (ii) $(x + 3)(x^2 - x - 5)$ (ii) $(2x - 3)^2$
17. Solve for x. $z = 3x - 2y + 6$
18. Find all solutions of the equation: $6x^2 = 3x$
19. If the original price of an item was 70 dollars and it was mark down a 20 %. What is the new price?
20. Find the equation of the vertical line passing through the point $(-4, 5)$.

21. Factor: (i) $ax - a^2$ (ii) $ab - a^2 + bx - ax$.

22. Simplify $\frac{(x^2y^3)^2}{xy^2}$.

23. Solve the quadratic equation $x^2 - 5x + 4 = 0$

24. Sketch the region determined by the inequality $2x - 3y < 6$.



25. If the cost of 3 pounds of a product is \$10. What is the cost of 5 pounds? Write your answer as a mixed number.