

BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

MATH 05 (JP)
Spring 2015

FOURTH 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.

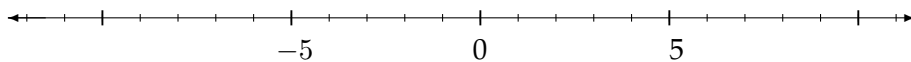
1. Evaluate: (a) $\frac{5}{6}((-5)^2 - (-5))$ (b) $2(-3 + 2)^2$ (c) $\frac{1}{5} - (\frac{1}{3} - 1)$

2. Evaluate the expression $3x^2 + 2x - 10$ for $x = -2$.

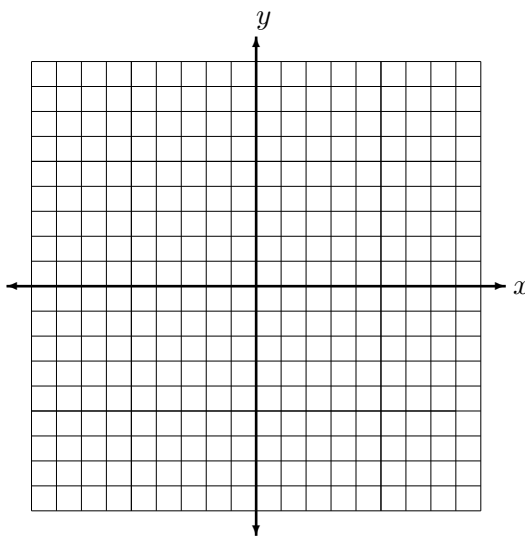
3. Solve for x : $3(4 - x) = 5(x - 2)$

4. Solve for y : $5y - 7x = 35$

5. Solve: $8x - 3 < 2x + 9$ and (a) graph the solution set, (b) express the solution set in interval notation.



6. Sketch the graph of $3x + 2y = -12$. Show the x and y intercepts.



7. Suppose $(1, 4)$ and $(4, -5)$ 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 :
$$\begin{cases} -2x + 5y = 1 \\ x - 3y = -1 \end{cases}$$

9. Write in Scientific Notation: (a) $7 \times 10^{-6} \times 6 \times 10^{13}$ (b) $\frac{45 \times 10^7}{100 \times 10^3}$

10. Simplify: $(3x^2 - 12x - 10) - (x^2 - 10x + 4)$

11. Simplify: $\frac{-8x^4 + 4x^3 - 24x^2}{4x^2}$

12. Factor completely: (a) $20x^2 - 9x$ (b) $2x^2 - x - 6$

13. Factor completely: (a) $4x^2 - 49$ (b) $4x^3 - 25x$

14. The sum of three consecutive numbers is 312. Find the smallest of the three.

15. Simplify the radicals: (i) $\sqrt{6}(3\sqrt{2} + \sqrt{6})$ (ii) $\sqrt{18} - \sqrt{50}$

16. Multiply and simplify: (ii) $(2x + 1)(x^2 + 2x - 3)$ (i) $(3x + 1)^2$

17. Solve for t: $(z - t + 2)/3 = y$

18. Find all solutions of the equation: $24x^2 - 6x = 0$

19. If the price of an item goes up from \$ 70 to \$ 84. What was the percent of increase?

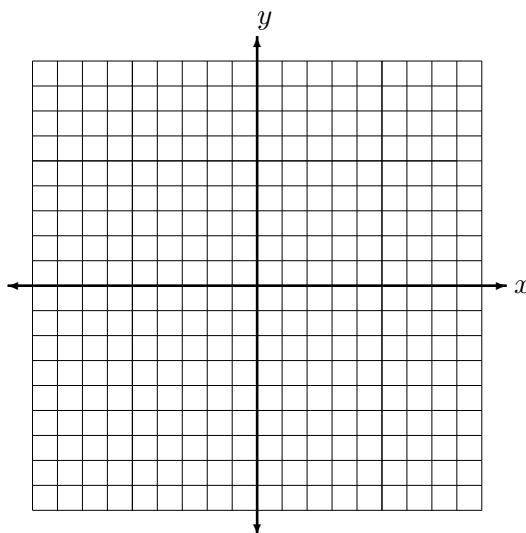
20. Find the equation of the horizontal line passing through the point $(-4, 5)$.

21. Factor: $2x^3 + 3x^2 - 8x - 12$.

22. Simplify: $\left(\frac{x^4y^2}{xy^{-1}}\right)^2$.

23. Find all solutions to the quadratic equation: $4x^2 - 8x - 5 = 0$

24. Sketch the region determined by the inequality $3x + 2y \geq -12$.



25. If the cost of 5 pounds of a product is \$12. What is the cost of 6 pounds? Write your answer as a mixed number.