BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

MATH 05 (JP) FOURTH EXAMINATION
FALL 2015 Due date: 12/09/2015

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.

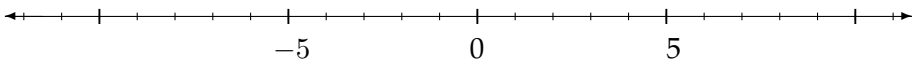
1. Evaluate: $(a)\quad 2-\frac{5}{6}$ $(b)\quad 2(-3)^2-7$ $(c)\quad \frac{1}{2}-(\frac{1}{3}-\frac{1}{2})$

2. Evaluate the expression $-5x^2+2x+18$ for $x=-2$.

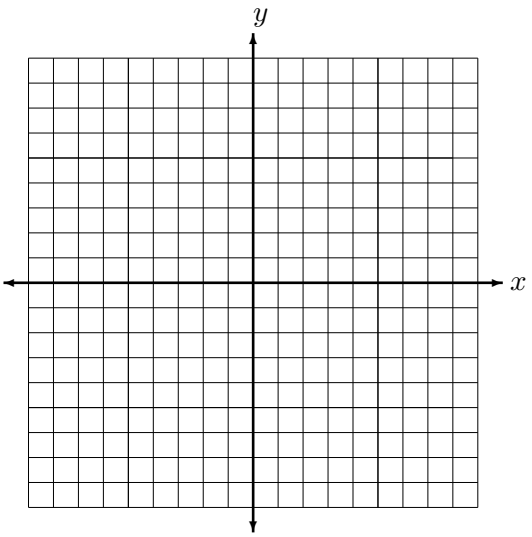
3. Solve for x: $-2(4+x)=5(x+2)+3$

4. Solve for x: $3x-7t-4=20$

5. Solve: $2x - 3 \geq 7x + 7$ and (a) graph the solution set,



6. Sketch the graph of $-2x + 4y = -16$. Show the x and y intercepts.



7. Suppose $(1, 4)$ and $(4, -2)$ 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. What is the value of the y coordinate: $\begin{cases} 3x + 5y &= 1 \\ 2x - 3y &= -1 \end{cases}$

9. Write in Scientific Notation: $(a) \quad 13 \times 10^{-8} \times 9 \times 10^{13}$ $\qquad$ $(b) \quad \dfrac{452 \times 10^{-2}}{10000 \times 10^{-7}}$

10. Subtract $-7x^3 + 4x^2 - 10x + 8$ from $-8x^3 + 8x^2 + 12x - 10$.

11. Simplify: $\dfrac{-16x^5 + 4x^3 + 24x^2}{-4x^2}$

12. Factor completely: $(a) 20x^2y - 5xy^2$ $\qquad$ $(b) 3x^2 - 7x - 6$ $\qquad$ $(c) 8y^2 - 50$

13. The sides of a right triangle are $a = 10$ and $b = 15$. Find the length of the hypothenuse.

14. From the equations below, find two equations representing parallel lines and two equations representing perperdicular lines:

$(a) 3x - 4y = 10$ $(b) 3x + 4y = 10$ $(c) 4x - 3y = 5$ $(d) 4y - 3x = 5$

15. Simplify the radicals: $(i) \dfrac{\sqrt{2}\sqrt{36}}{\sqrt{6}}$ $(ii) -3\sqrt{12} + \sqrt{300} - 2\sqrt{48}$

16. Multiply and simplify: (i) $(-2x + 1(4x^2 - 2x + 5)$ $(ii)(2x - 3)^2$

17. If n represents a number, what is the correct translation for the sentence: "65 is 17 less than 7 times the number".

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

19. If the price of an item goes up from $ 70 to $ 75. What was the percent of increase? Write your answer as a mixed number.

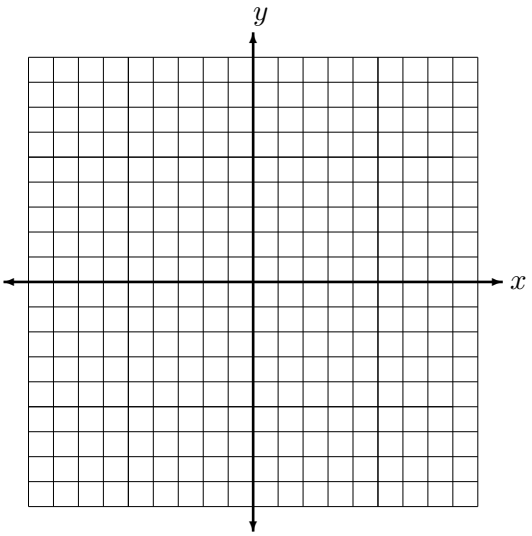
20. Find the equation of the verticall line passing through the point $(-4, 5)$.

21. Facto completelyr: $4x^3 - 8x^2 - x + 2$.

22. Simplify: $\dfrac{-4(x^4y^{-2})^2}{2x^3y^{-9}}$.

23. Find all solutions to the quadratic equation: $x^2 - x = 12$

24. Sketch the region determined by the inequality $-3x + 5y \geq -15$.



25. If the cost of 6 pounds of a product is \$14. What is the cost of 8 pounds? Write your answer as a mixed number.