

BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 05
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Exam 4
August 1, 2016

Name: _____

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 4 points**

1. Given $a = -4$ and $b = 2$, evaluate the expression given below.

$$a^2 + 2ab - ab^2$$

A. -48 B. -16 C. 16 D. 48

2. Solve for x :

$$\frac{x+4}{2} = \frac{x+9}{3}$$

A. $x = 1$ B. $x = 5$ C. $x = 6$ D. $x = 14$

3. Find all solutions to the equation: $4a^2 - 12 = 0$

A. $a = 2$, or $a = -2$
B. $a = 3$, or $a = -3$
C. $a = \sqrt{3}$, or $a = -\sqrt{3}$
D. There are no real solutions.

4. Find all solutions to the equation: $3y^2 + 12 = 0$

A. $y = 2$, or $y = -2$
B. $y = 3$, or $y = -3$
C. $y = \sqrt{3}$, or $y = -\sqrt{3}$
D. There are no real solutions.

5. Simplify: $x^{-6}x^3$

A. x^3 B. $-x^3$ C. $\frac{1}{x^3}$ D. $-\frac{1}{x^3}$

6. Simplify $\frac{24x^6y^3}{-6x^3y}$

A. $-4x^2y^3$ B. $-4x^3y^2$ C. $-4x^3y^3$ D. $-4x^9y^4$

7. Simplify $(a - b)^2$

A. $a^2 + b^2$ B. $a^2 - b^2$ C. $a^2 - 2ab + b^2$ D. $a^2 + 2ab - b^2$

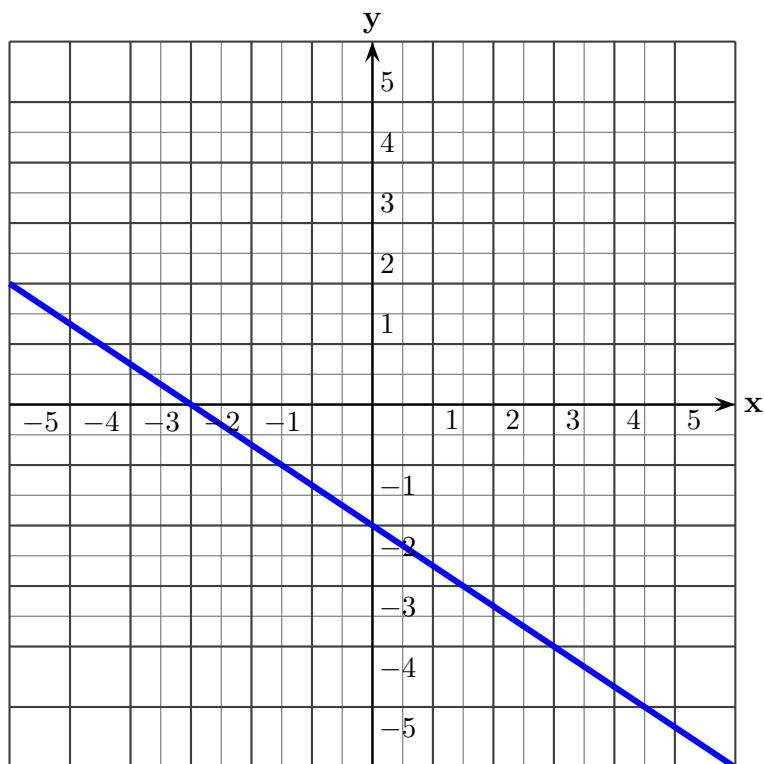
8. Simplify: $(5x^2 - 7x + 9) - (-2x^2 - 3x + 2)$

9. Simplify. Give your answers using positive exponents only: $(-2x^2y^{-3}w^{-2})^{-3}$

10. Simplify: $\frac{30x^9 + 8x^7 - 2x^5}{-2x^5}$

11. Multiply: $(x - 1)(x^2 - 2x + 3)$

12. What is the slope of the line graphed below?



- A. $\frac{2}{3}$ B. $-\frac{2}{3}$ C. $\frac{3}{2}$ D. $-\frac{3}{2}$

13. Which of the following is a factor of the polynomial: $21ab - 14ax + 15by - 10xy$

- A. $3b - 2x$ B. $3b + 2x$ C. $7a - 5y$ D. $7a + 2y$

14. Factor completely: $16a^2b - 100b^3$

15. Factor completely: $2x^2 - x - 55$

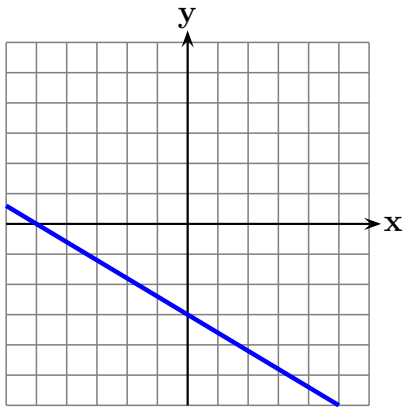
16. Solve: $7z^2 + 28z = 0$

17. Solve: $y^2 + 2y = 15$

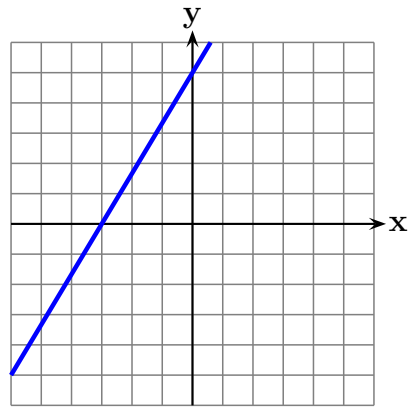
18. Solve: $x^2 - 35 = 2x$

19. Which of the following is the graph of the equation?

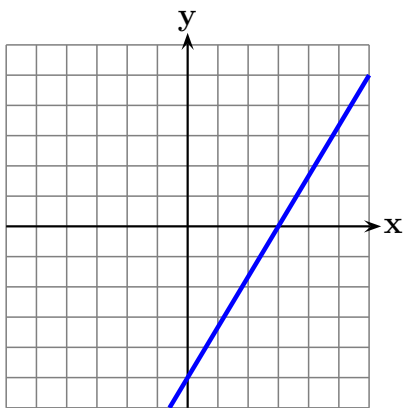
$$5x + 3y = -15$$



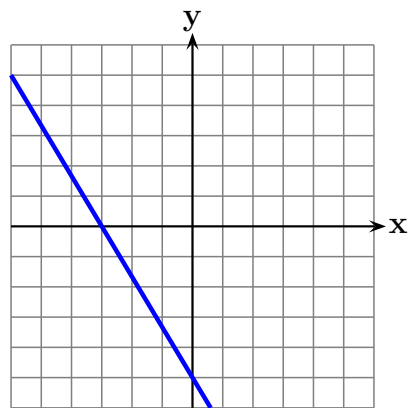
(A)



(B)



(C)



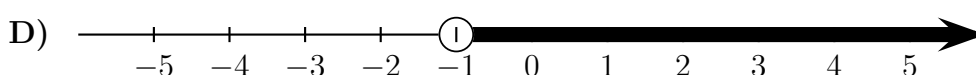
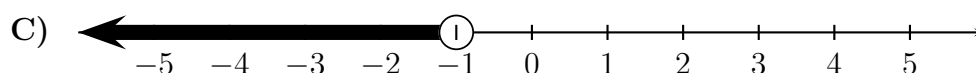
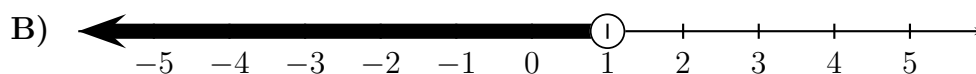
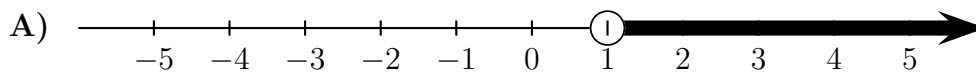
(D)

20. Find the equation of the line passing through the points $(-1, 4)$ and $(2, -2)$. Write the equation in slope-intercept form.

- A. $y = -2x + 2$ B. $y = -2x - 2$ C. $y = 2x - 2$ D. $y = 2x + 4$

21. Find the graph of the solution to the inequality.

$$-5x + 6 < -2x + 3$$



22. What is the value of the y -coordinate of the solution to the following system of equations?

$$\begin{cases} x + 5y = 17 \\ -2x - 2y = -2 \end{cases}$$

A. $y = -4$ B. $y = 4$ C. $y = 16$ D. $y = -16$

23. Solve for x : $18 - 5x = -3(x - 2)$

A. $x = 10$ B. $x = 6$ C. $x = -12$ D. $x = 12$

24. Find all solutions of the equation: $x(x - 1) = 12$.

A. $x = -3$, or $x = 4$

B. $x = 3$, or $x = -4$

C. $x = 12$, or $x = 13$

D. $x = -12$, or $x = -13$

25. Which of the following is a factor of the polynomial $6x^2 - 7x + 2$

A. $3x + 2$ B. $2x - 1$ C. $x - 3$ D. $x - 4$