BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 05   Practice Exam 3

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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** 5 **points**

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1. Evaluate: $-7 \cdot (-5 + 2) - 4^2 \div 2 \cdot 3$

2. Let $f(x) = 2x^3 + 2x^2 - x - 2$. Find both $f(0)$ and $f(-3)$.

3. Solve for x: $-2(4x - 5) + 2x = 3(2x + 6) - x - 2$
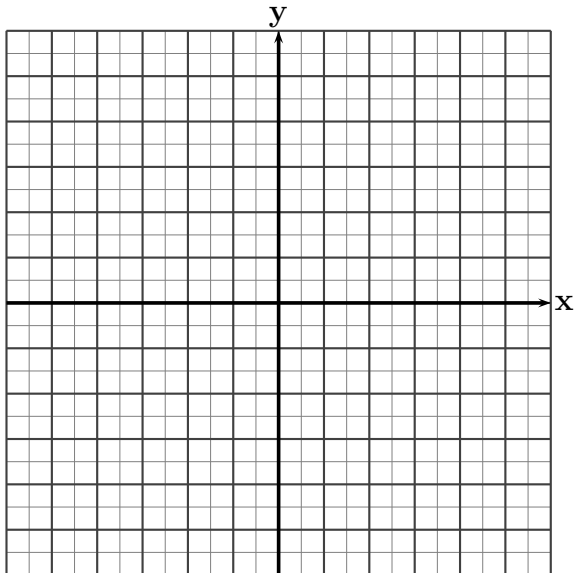
4. Solve for y: $-6x + 5y = -30$

5. Solve $-6x - 7 < 13$ and

    (a) graph the solution set

    (b) express the solution set in interval notation.

6. Solve for x: $|3x - 7| = 13$

7. Sketch the graph of $2x - 5y = 10$. Show the x and y intercepts.

8. Find an equation for the line that passes through the points $(-2, 3)$ and $(2, 9)$.

9. Solve for x and y:

$$\begin{cases} 4x - 3y & = -24 \\ 3x + 6y & = 15 \end{cases}$$

10. Multiply and simplify: $\quad (3x - 2)(9x^2 + 6x + 4)$

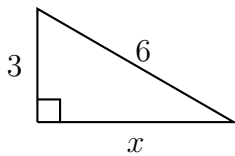11. Simplify: $\quad \left(\dfrac{2x^2y^3}{zy^2}\right)^5 (x^3yz^2)^3$

12. Simplify: $\quad \dfrac{16x^4 - 32x^3 + 4x^2}{-4x^2}$

13. Divide $6x^2 - 7x - 20$ by $2x - 5$.

14. Solve for x: $\quad 3x^2 + 11x - 4 = 0$

15. Factor completely: $\quad 3x^2y^3 - 12x^2y$

16. Find the missing side length x and simplify your answer:

17. At 1 PM two buses leave a town heading in opposite directions. If one bus is traveling at 54 mph and the other at 63 mph, what time is it when they are 468 miles apart?

18. If a car gets 27 miles per gallon of gas, how many gallons of gas are needed to travel 42 miles?

19. Factor: $10x^3 - 15yx^2 + 14xy - 21y^2$

20. Simplify: $\sqrt{75x^{20}y^5}$