BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 05 Exam 1
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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**

1. Evaluate: $5 - 3(4 - 3) - 2^3 \div 8 \cdot 4$.

2. Evaluate: $\dfrac{-16}{9} \cdot \dfrac{18}{-25} \cdot \left(-\dfrac{10}{6}\right) \cdot \dfrac{-5}{4} \cdot \dfrac{3}{4}$.

3. Evaluate, if $a = -\dfrac{2}{5}$ and $b = \dfrac{7}{10}$: $-3a + 11b$

4. Evaluate if $c = -2$ and $d = -3$: $c^2 - d^2$.

5. Solve the equation:

$$2(3x-1)+2x+5=5x-2(x-3)+12$$

6. Solve the equation:

$$\frac{x-2}{5}+\frac{8-x}{3}=x$$

7. Solve the following inequality, give the answer using interval notation and graph the solution set.

$$9-2(2x+3)\geq -7x-3$$

8. Solve for x: $|3x - 5| = 7$.

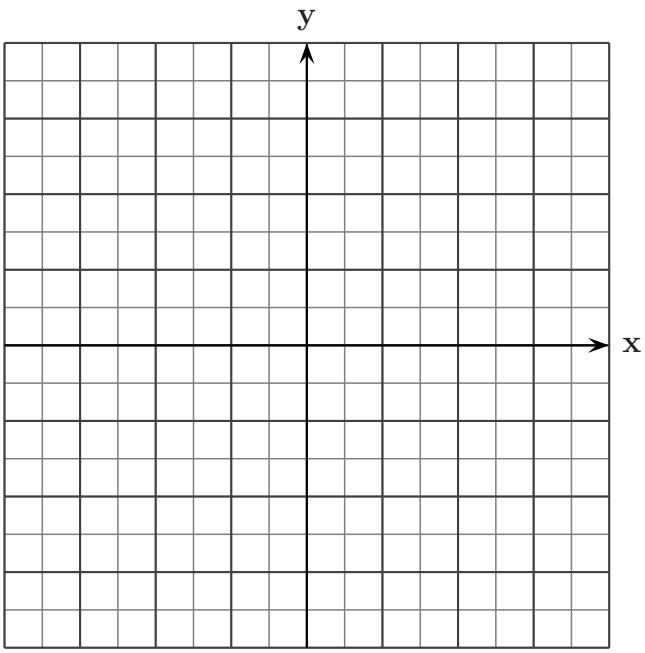
9. Solve for x: $|2x + 1| = -2$.

10. The width of a rectangle is 2 inches more than 3 times its length. If the perimeter of the rectangle is 84 inches find its dimensions.

11. At 2 pm, two cars leave a town heading in opposite directions. If one car is traveling at 54 mph and the other at 66 mph, what time is it when they are 480 miles apart?

12. At 3 pm two buses leave a town heading in the same direction. If one bus is traveling at 65 mph and the other at 56 mph, what time is it when they are 45 miles apart?

13. Graph the line with equation $2x - 3y = -6$ in the following grid.



14. Find the slope and the x– and y–intercepts of the line with equation $3x - 4y = 12$.

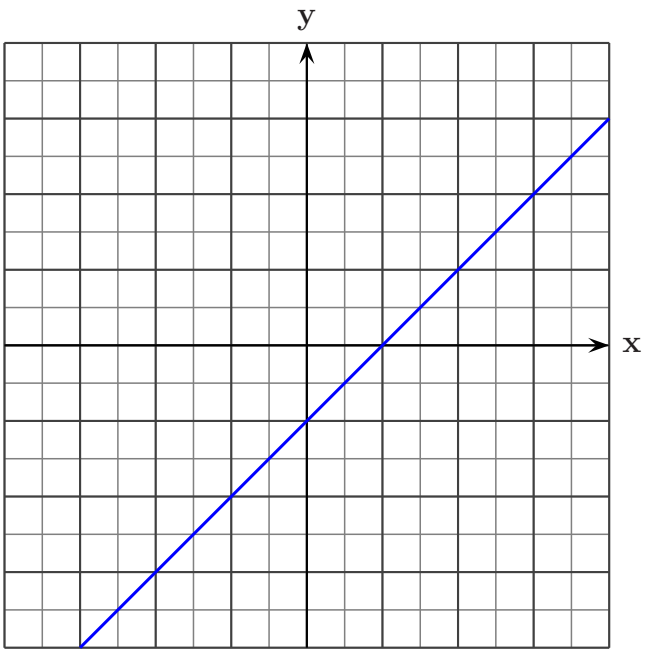
15. A line has slope -2 and passes through the point $(-1, -3)$. Find its equation.

16. A line passes through the points with coordinates $(-2, 18)$ and $(3, 3)$. Find an equation for this line.

17. A line is parallel to the line with equation $4x - 2y = 3$ and contains the point with coordinates $(-3, 4)$. Find the equation of this line.

18. A line passes through the point $(3, 4)$ and is parallel to the line with equation $x = -4$. Find its equation.

19. Find an equation for the line whose graph is shown below:



20. In how many points do the lines with equations $y = 3x - 4$ and $y = 4x - 3$ intersect? Justify your answer.