BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 05 — Exam 1
Nikos Apostolakis — March 15, 2013

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** 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. Write a mathematical statement that represent the following English statement: Five more than three times a number is 65.

4. Solve for a: $\dfrac{3a - 5}{b} = b + 1$

5. Solve the equation: $\dfrac{x-2}{5} + \dfrac{8-x}{3} = x$

6. Solve the equation:

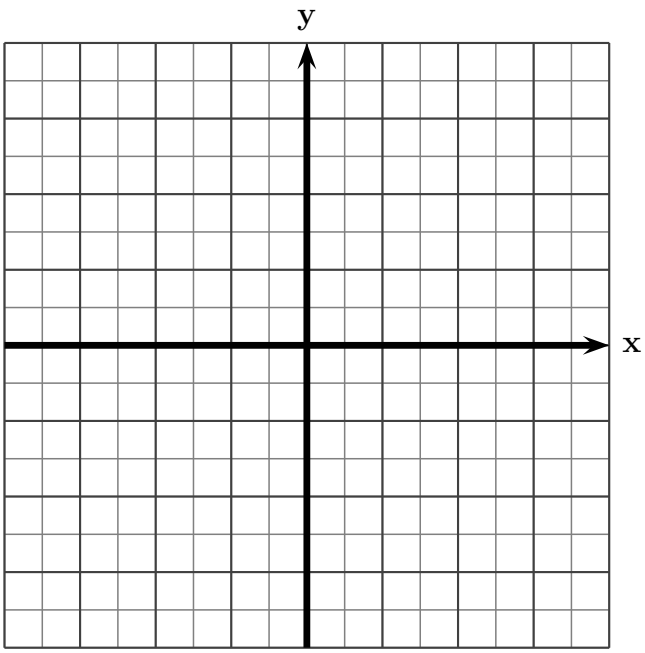
$$-2(3x-1) = 5(x+2) - 11x + 7$$

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

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

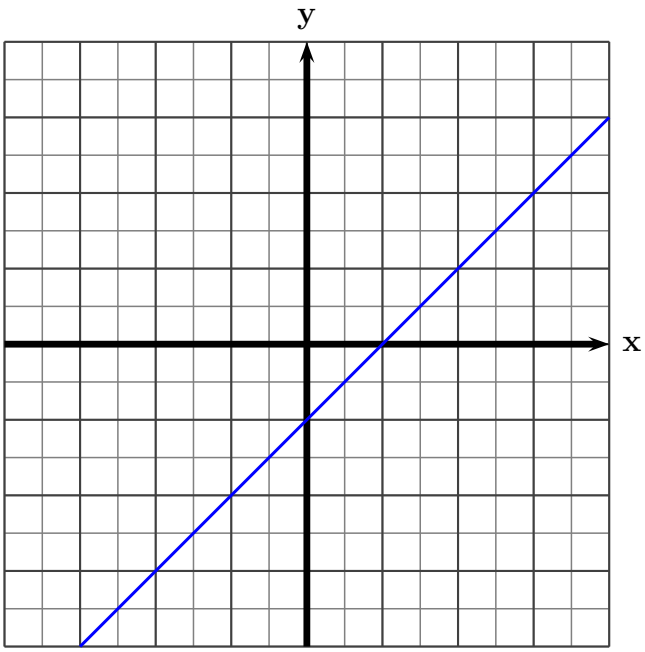
8. The width of a rectangle is 2 inches more than 3 times its length. If the perimeter of the rectangle is 76 inches find its dimensions.

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



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

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



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

13. Evaluate: $13 - 28 \div 4 \cdot 2$

    A. 1 B. -1 C. 6 D. -6

14. Evaluate $a^2 - b^2$, when $a = 3$ and $b = -3$.

    A. 18 B. -18 C. 0 D. 12

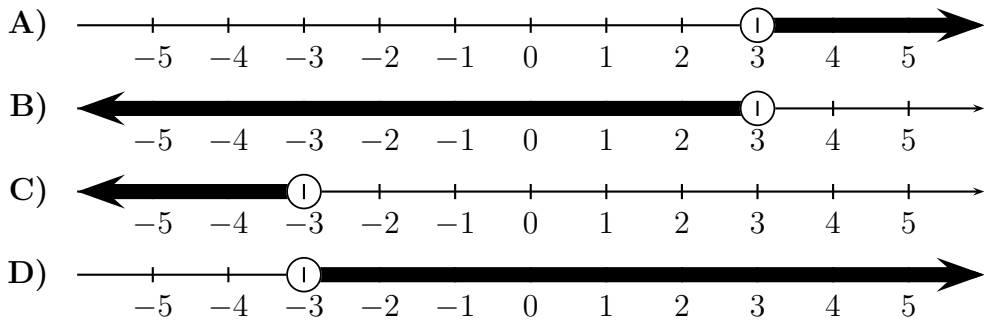
15. Solve for a: $5(2 - 3a) = 1 - 12a$

    A. $a = 5$ B. $a = -5$ C. $a = 3$ D. $a = -3$

16. Find the equation of the vertical line passing through the point $(7, -3)$.

    A. $y = -\frac{7}{3}x - 3$ B. $y = 7x - 3$ C. $y = -3$ D. $x = 7$

17. Find the graph of the solution to the inequality $2x - 6 < 5x + 3$



18. Solve for z: $\quad 2x - 4z = 3 - y$

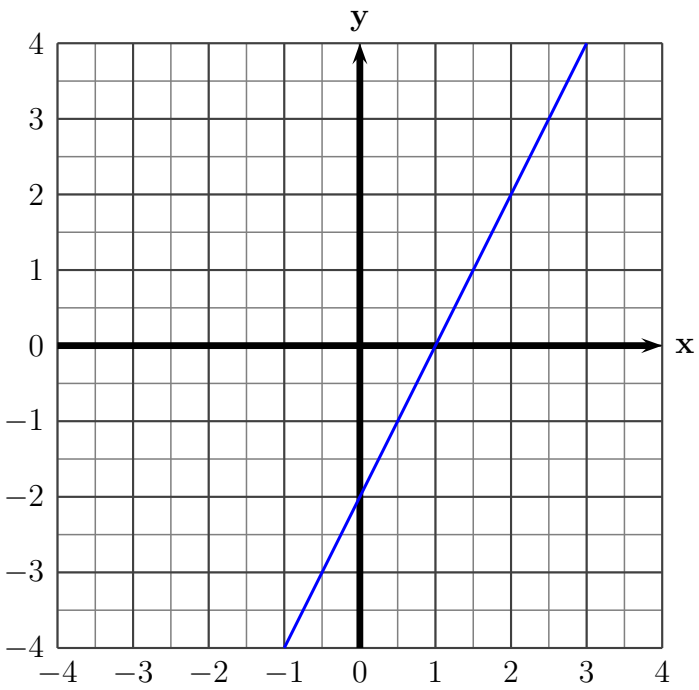
A. $z = \dfrac{2x - y + 3}{4}$

B. $z = \dfrac{3 - 2x - y}{4}$

C. $z = \dfrac{2x + y - 3}{4}$

D. $z = -4(2x + y - 3)$

19. Choose the correct equation for the line whose graph is shown below:



A. $y = -2x + 2$

B. $y = -2x - 2$

C. $y = 2x + 2$

D. $y = 2x - 2$

20. A line has slope -5 and is passing through the point $(2, 3)$. Find the equation of the line in slope-intercept form. A. $y = -5x + 13$ B. $y = -5x - 13$ C. $y = -5x - 3$ D. $y = -5x + 3$