Math 51B Exam Review Second half

Graph the following lines.

1. $3x - y = 3$

2. $2x + 5y = 10$

3. $y = -\frac{1}{3}x - 4$

4. $y = \frac{3}{5}x$

5. $3x - 2y = -6$

6. $y = -\frac{4}{5}x + 2$

7 $x = -7$

8. $y = 4$

Find the **slope** of the line passing through the given points

9. (-1, 4) and (5, 2).

10. (-2, 3) and (6, -5).

Write an **equation of the line** with the properties given. Your answer is to be in slope-intercept form.

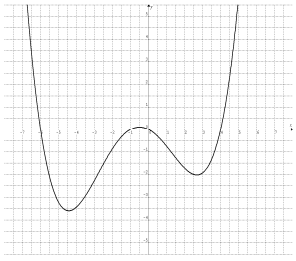
11. slope $\frac{2}{3}$ through (3, 4)

12. slope -2 through (-3, 1)

13. slope -3 through (2, -4)

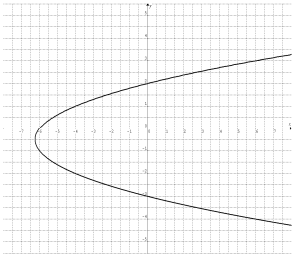
14. Through (0, 3) and (4, 0)

15. Decide if the graph is a function. Circle the appropriate response.

a) 

function

not a function

b) 

function

not a function

Evaluate the functions as indicated.

16. $f(x) = 2x - 5$ Find a) f(0) b) f(4)

17. $g(x) = x^2 - 4x + 5$ Find a) g(1) b) g(2)

18. Solve the system **graphically**. Use the graphs of the two lines to get the solution.

$y = 2x - 8$ $y = \frac{2}{3}x - 4$

Write each equation in slope- intercept form. **Without graphing or solving**, state whether the system has exactly one solution, no solution, or an infinite number of solutions.

19. $y = 3x - 2$
$-6x + 2y = -4$

20. $-4x - 2y = 3$
$6x + 3y = 1$

Solve the following systems using any algebraic method, substitution or addition/elimination.

21. $x - y = 4$
$x + y = -2$

22. $4x - 3y = -16$
$y = 3x + 7$

23. $2x + 3y = -2$
$4x + y = 4$

24 $2x + y = 3$
$y = 3x + 8$

25. $3x + 2y = 23$
$5x - 3y = 13$

26. $2x - 3y = 47$
$x + 2y = -8$

27. Guinan has coffee costing $5.60 per pound and a premium blend costing $6.20 per pound. How many pounds of each type of coffee must she use to get 27 pounds of a mixture of coffee that she could sell for $5.80 per pound?

28. Solution A is 18% acid, and solution B is 50% acid. How much of each is needed to make 100 liters of a solution that is 42% acid?

29. Two cars leave town at the same time traveling in the same direction. One car travels 56 mph and the other travels 65 mph. In how many hours will the cars be 63 miles apart?

SIMPLIFY. Assume all variables represent positive real numbers.

30. $\sqrt{49y^2}$

31. $\sqrt{48x^3y^2}$

32. $\sqrt{30} \cdot \sqrt{12}$

33. $\sqrt{5a^3b} \cdot \sqrt{10ab^5}$

SIMPLIFY. Assume all variables represent positive real numbers.

34. $\sqrt{\frac{50}{72}}$

35. $\sqrt{\frac{2}{5}}$

36. $\sqrt{\frac{21x^2}{75y^2}}$

37. $\sqrt{72} - \sqrt{75} + \sqrt{2}$

38. $5\sqrt{27} - 3\sqrt{48}$

39. $2\sqrt{12} + \sqrt{27}$

40. Rationalize the denominator $\frac{\sqrt{7}}{\sqrt{7} - \sqrt{2}}$

41. Solve $\sqrt{3x-2} = 7$

Solve the following equations, using any method that will obtain a solution, if one exists.

42. $2x^2 - 3 = 0$

43. $(x-7)^2 = 10$

44. $x^2 - x - 4 = 0$

45. $5x^2 - 4x - 9 = 0$

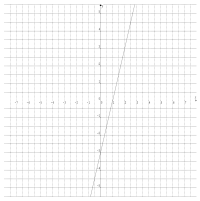
46. $2x^2 = 5x - 1$

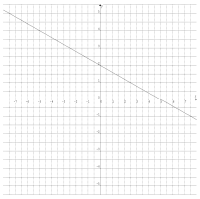
Approximate the solutions to each of the following to the nearest tenth.

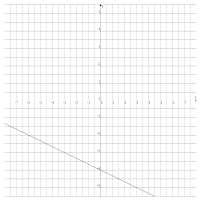
47. $x^2 + 12x + 14 = 0$

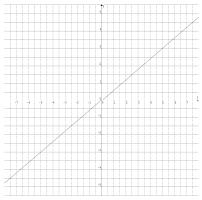
48. $x^2 - 4x + 2 = 0$

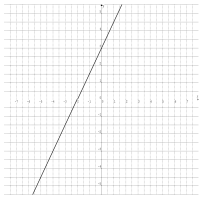
Answers

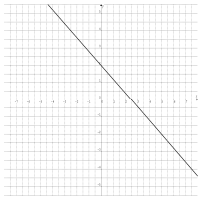
1. 

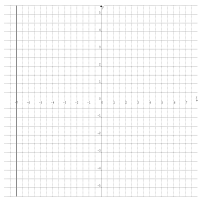
2. 

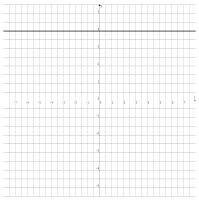
3. 

4. 

5. 

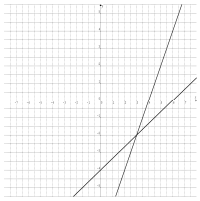
6. 

7. 

8. 

9 $-\frac{1}{3}$ 10. –1 11. $y = \frac{2}{3}x + 2$ 12. $y = -2x - 5$ 13. $y = -3x + 2$

14. $y = -\frac{3}{4}x + 3$ 15. a) function b) not a function 16. a) -5 b) 3 17. a) 2 b) 1

18. (3, -2)  19. Infinite 20. No solution 21. (1, -3)

22. (-1, 4) 23. $\left(\frac{7}{5}, -\frac{8}{5}\right)$ 24. (-1, 5) 25. (5, 4) 26. (10, -9)

27. 18 lbs at \$5.60 and 9 lbs at \$6.20 28. 75 L of 50% and 25 L of 18% 29. 7 hours

30. 7y 31. $4xy\sqrt{3x}$ 32. $6\sqrt{10}$ 33. $5a^2b^3\sqrt{2}$

34. $\frac{5}{6}$ 35. $\frac{\sqrt{10}}{5}$ 36. $\frac{x\sqrt{7}}{5y}$ 37. $7\sqrt{2} - 5\sqrt{3}$

38. $3\sqrt{3}$ 39. $7\sqrt{3}$ 40. $\frac{7 + \sqrt{14}}{5}$ 41. 17

42. $\pm\frac{\sqrt{6}}{2}$ 43. $7 \pm \sqrt{10}$ 44. $\frac{1 \pm \sqrt{17}}{2}$ 45. $-1, \frac{9}{5}$

46. $\frac{5 \pm \sqrt{17}}{4}$ 47. -10.7, -1.3 48. 3.4, 0.6