

Name: _____

Math Department: Summer Assignment for Students Entering Geometry

The purpose of this assignment is to keep your math skills “fresh” over the summer. The assignment will be checked when you return to school. A quiz will be given on this material after classes begin.

If you would like additional practice, or tutorials on problems similar to those below, visit www.math.com (the most helpful categories will most likely be the “Pre-Algebra” and “Algebra” categories). Also, you can refer to your notebook from previous math classes if you need additional help.

Below, show work to indicate how you got your answer; do so without the use of a calculator.

Solve the following equations

1. $x + 7 = 15$

2. $y + 12 = -20$

3. $-\frac{x}{8} = 16$

4. $3x = -108$

5. $-\frac{2}{3}y = -\frac{4}{15}$

6. $-6x + 4 = 28$

7. $5x + 3x = -64$

8. $8(3a + 5) + a = -65$

9. $2x + 20 + 33x = 80 + 15x$

10. $14p - 10 = 8 + 2p$

11. $3(2x - 1) + 4 = x + 25$

12. $\frac{y}{3} - 2 = 7$

13. $\frac{2}{9}m + \frac{1}{3} = \frac{4}{3} + \frac{1}{9}m$

14. $0.9x - 0.5x = 6$

Solve the following inequalities

15. $x - 2 > 5$

16. $-6x \leq -24$

Solving Equations

17. $3(x-5) - (2x+1) = 3-x$

18. $-\frac{3}{5}x = \frac{12}{5}$

Simplifying Expressions – Perform the Indicated Operation

19. $3x^3 + 5x - 7 + 2x^3 + 5$

20. $(x^2 + 3x - 4) - (3x^2 + 3x + 4)$

21. $(3x^2y)(-4xy^3)$

22. $\frac{6x^3}{2x}$

23. $\left(\frac{2x^2}{3y}\right)^3$

24. $(2x-3)(3x+1)$

25. $-3x(2x^3 - 5x^2 + x - 1)$

26. $(2x+3)^2$

Simplifying Radicals

27. $\sqrt{48}$

28. $\sqrt{x^7}$

29. $\sqrt{a^8}$

30. $\sqrt{12} \times \sqrt{8}$

31. $\frac{\sqrt{75}}{\sqrt{3}}$

32. $\frac{1}{\sqrt{3}}$

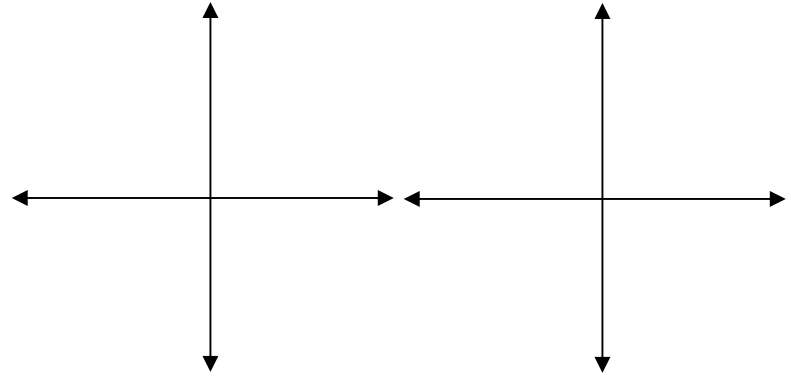
33. $\sqrt{12} + 3\sqrt{3} - 2\sqrt{27} + \sqrt{2}$

Coordinate Geometry

34. Graph these lines:

a. $2x + 5y = 10$

b. $y = -\frac{2}{3}x + 1$



35. Find the slope:

a. $y = 2x + 5$

b. through $(3, 1)$, $(-2, 4)$

36. Find the equation of each line:

a. the slope is 2, the y-intercept is -3

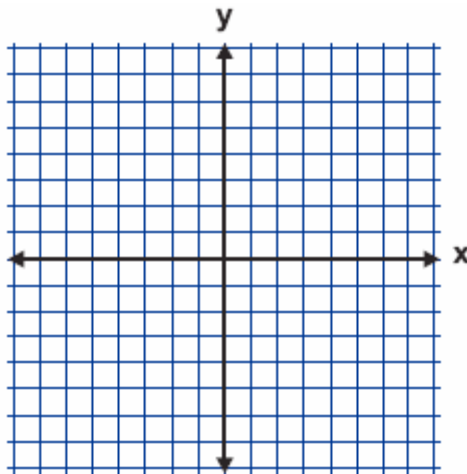
b. $m = \frac{1}{2}$, the line goes through the point $(-2, 3)$

Solving Systems

37. By Graphing

$y = -x + 3$

$x - y = 1$



38. By Substitution

$y = 2x - 5$

$-x + 3y = 5$

39. By Elimination

a. $x + y = 8$

$-x + 2y = 7$

Factoring – Factor each problem completely

40. $x^3 - 3x$

41. $x^2 - 7x + 10$

42. $4x^2 - 4x - 15$

43. $3x^2 + 2x - 5$

44. $x^2 + 19x + 60$

45. $x^2 - 5x - 6$

Word Problems – Define necessary variables, write equation(s), and solve

46. The sum of three odd consecutive integers is less than 100. Find the largest of these integers.

47. On a table there are 20 coins, some quarters and some dimes. Their value is \$3.05. How many of each coin are there?

ANSWERS

1. $\{8\}$

2. $\{-32\}$

3. $\{-128\}$

4. $\{-36\}$

5. $\left\{\frac{2}{5}\right\}$

6. $\{-4\}$

7. $\{-8\}$

8. $\left\{-\frac{21}{5}\right\}$

9. $\{3\}$

10. $\left\{\frac{3}{2}\right\}$

11. $\left\{\frac{24}{5}\right\}$

12. $\{27\}$

13. $\{9\}$

14. $\{15\}$

15. $\{x : x > 7\}$

16. $\{x : x \geq 4\}$

17. $x = \frac{19}{2}$

18. $x = -4$

19. $5x^3 + 5x - 2$

20. $-2x^2 - 8$

21. $-12x^3y^4$

22. $3x^2$

23. $\frac{8x^6}{27y^3}$

24. $6x^2 - 7x - 3$

25. $-6x^4 + 15x^3 - 3x^2 + 3x$

26. $4x^2 + 12x + 9$

27. $4\sqrt{3}$

28. $x^3\sqrt{x}$

29. a^4

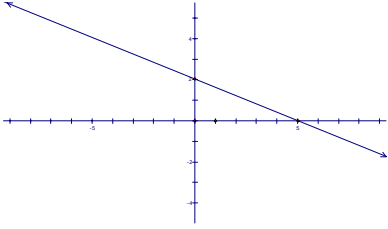
30. $4\sqrt{6}$

31. 5

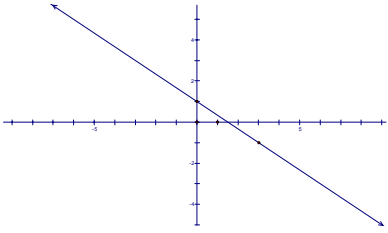
32. $\frac{\sqrt{3}}{3}$

33. $-\sqrt{3} + \sqrt{2}$

34. a)



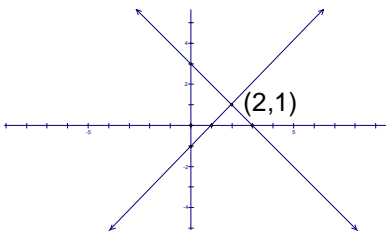
b)



35. a) $m = 2$ b) $m = -\frac{3}{5}$

36. a) $y = 2x - 3$ b) $y = \frac{1}{2}x + 4$

37.



38. (4,3)

39. (3,5)

40. $x(x^2 - 3)$

41. $(x - 5)(x - 2)$

42. $(2x - 5)(2x + 3)$

43. $(3x + 5)(x - 1)$

44. $(x + 15)(x + 4)$

45. $(x - 6)(x + 1)$

46. 35

47. 7 Quarters, 13 Dimes