

Trumbull High School
Algebra II Honors Summer Packet

****Due the second day of school – will be counted as the first homework assignment****

Solve the system of equations:

1. $5x + 4y = 6$

$-2x - 3y = -1$

2. $-2x + y = 8$

$y = -3x - 2$

3. $-x + 2y = 11$

$-2y + 3x = -13$

4. $3x - 2y = 5$

$-6x = -4y + 7$

Solve each linear equation:

5. $-4(3 - x) = 2(x + 6)$

6. $2(3x + 6) + 8 = 6x$

7. $3(4 - 2x) = 12 - 3x$

8. $3x - 2(x + 1) = 0$

9. $3(x + 2) + 1 = 2x + 7 + x$

10. $\frac{4x+5}{-3} = \frac{3x-6}{2}$

Solve each equation for the indicated variable:

11. $2x - 6y = 12$ for y

12. $V = \frac{4}{3}\pi r^3$ for r

Factor each polynomial:

13. $x^2 - x - 72$

14. $7x^3 - 4x^2 + 8x$

15. $a^2 + 20a + 64$

16. $10m^3n^2 - 15m^2n + 25m$

17. $2x^2y - 4xy - 30y$

18. $x^2 - 64$

19. $2x^2 - 9x - 5$

20. $x^2 + 12x + 36$

21. $6b^2 - 8b - 30$

22. $m^4 - n^4$

23. $8g^2 - 22gh + 15h^2$

24. $25w^2 + 49v^2$

25. $wz - 18 + 6z - 3w$

26. $x^2y^2 - 25y^2 + x^2 - 25$

Solve each quadratic equation:

27. $r^2 + 10r - 9 = 0$

28. $p^2 + 6p = 0$

29. $x^2 - 3x = 10$

30. $5m^2 = 7m$

31. $(2c + 1)(c + 3) = 0$

32. $y^2 = 4y + 32$

33. $2x^2 - 3x - 2 = 0$

34. $d^2 + 5d - 1 = 0$

Write the equation of the line in standard form:

35. through (0,1) with slope -1

36. through (2,3), $m = -\frac{4}{3}$

37. perpendicular to $y = \frac{2}{5}x - 4$ through (3,-3)

38. vertical through (5,4)

39. parallel to $x = 8$ through (-7,12)

40. through (3,4) and (2, -4)

41. parallel to through (3,-7)

42. through (3,-1), $m = 0$

43. with x - intercept 6, y - intercept 7

44. through (2,3) and (7, -2)

Simplify each of the following:

45. $(-3x^2 - 4x + 7) + (2x^2 - 7x + 8)$

46. $\frac{64x^3y^2 - 16x^2y^3 + 32x^5y^5}{8x^2y^2}$

47. $(39a^4 - 4a^3 + 2a^2 - a - 7) - (10a^4 + 3a^3 - 2a^2 - a + 8)$

48. $2x^2z(3x - 2z)$

49. $-3xy^3(x - 2y)$

50. $(3x^2 - x + 1)(2x + 5)$

51. $\frac{10a^3b^2c^7}{5a^5bc^7}$

52. $(8a^3b^2)(2a^{-4}b^{-5})$

53. $(15m^3n^2)^0$

54. $(2x - 7)^2$

55. $(3x - 7)(2x + 9)$

56. $\frac{3x^6y^7}{27x^{-3}y^8}$

57. $(-3x^5y^6)^3$

58. $(2a^4b^{-3}c^{-2})(3a^{-5}b^{-1}c^3)^2$

59. $\left(\frac{4f^2g^{-3}h}{2f^{-3}g^{-6}h^{-4}}\right)^{-3}$

60. $\frac{1}{2}(4x^3y^{-4}z^{-6})^4$

61. $\left(\frac{12m^{-20}n^{-35}p}{22m^{56}n^{48}p^{-16}}\right)^2$

62. $9d^{-2}k^4(-3c^{-4}d^{-3}k^{-2})^{-5}$

Simplify the following using exact answers, no decimals:

63. $\sqrt{32}$

64. $\sqrt{\frac{3}{5}}$

65. $\sqrt{\frac{5}{8}}$

66. $\sqrt{48x^5y^8}$

67. $\sqrt{8} + \sqrt{18} - \sqrt{32}$

68. $\sqrt{21} \cdot \sqrt{14}$

69. $(4\sqrt{3})(-6\sqrt{6})$

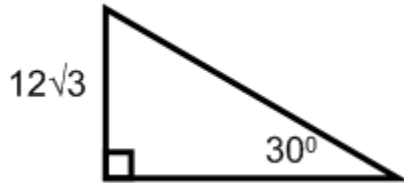
70. $\frac{3\sqrt{15}}{4\sqrt{3}}$

71. $(x - 3\sqrt{3})^2$

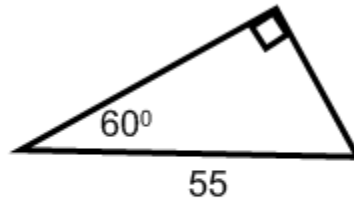
72. $\frac{4\sqrt{3} - \sqrt{2}}{\sqrt{2}}$

Use special right triangle ratios to find the missing sides.

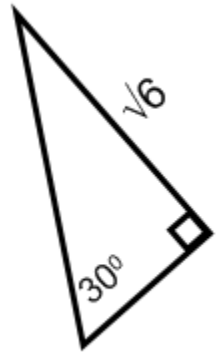
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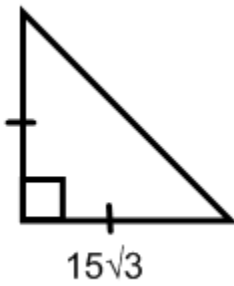
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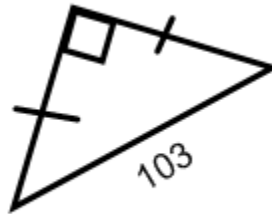
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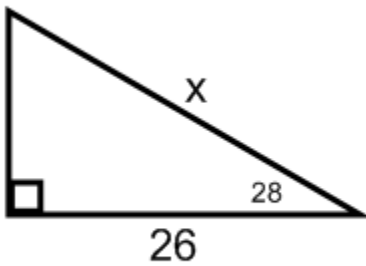


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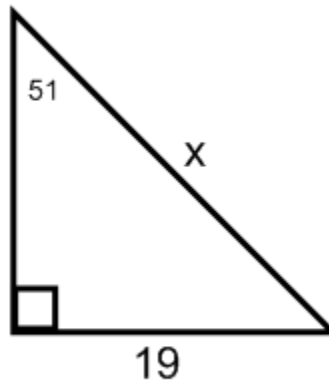


Use right triangle trigonometry (sine, cosine, tangent) to find the value of the variable.

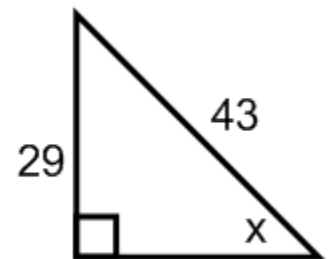
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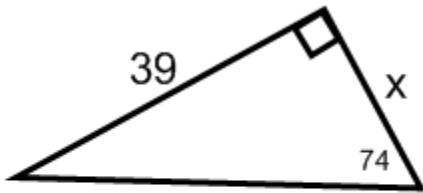
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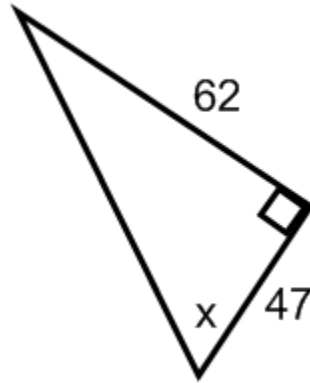
81.



82.



83.



84.

