Algebra 2 Pre-AP SHOW ALL WORK ON SEPARATE PAPER/GRAPH PAPER!!

Summer Assignment DO NOT WRITE ON THIS FORM!!

Simplify each expression.

1) $2(1 + 8k) - 7$

2) $-9(-5x + 8) + 5$

3) $-9n(7 + 6n) + 10(2n + 5)$

4) $9x(x + 6) - 4(1 + 8x)$

Solve each equation.

5) $40 - 5k = 8(k - 2) - 6k$

6) $-8(b - 7) = -2b + 38$

7) $-3(x - 1) = -(2x - 4) + 2$

8) $4(r - 5) - 6 = 8 + 2(3r - 3)$

Solve each inequality and graph its solution on a number line.

9) $34 - 8x > -5(6x + 2)$

10) $8 - (6 + 7n) \geq -5n + 14$

11) $-3(-5 - k) > 7(5k - 7)$

12) $-5(n - 8) + 7 \leq -2(2 - 6n)$

Write the slope-intercept form of the equation of the line through the given points.

13) through: $(3, 4)$ and $(-3, -5)$

14) through: $(1, 4)$ and $(4, -5)$

Write the point-slope form of the equation of the line through the given points.

15) through: $(2, -4)$ and $(3, -1)$

16) through: $(4, 1)$ and $(-5, -3)$

Write the standard form of the equation of the line through the given points.

17) through: $(5, -3)$ and $(1, 2)$

18) through: $(-4, 1)$ and $(-1, -1)$

Graph each linear function on properly labeled and scaled axes. Graphs must be on graph paper, using a straight edge.

19) $y = \frac{3}{4}x - 4$

20) $y = -\frac{5}{2}x + 1$

21) $y = -2x - 1$

22) $x - y = -4$

23) $4x + 5y = 20$

24) $2x - y = -5$

Solve each system by substitution.

25) $2x + 6y = 2$
$x - 5y = -7$

26) $-3x - 4y = 19$
$3x + y = -7$

Solve each system by elimination.

27) $4x - 5y = -3$
$7x - 4y = -10$

28) $7x + 2y = -16$
$3x - 3y = -30$

Solve each system by graphing. Graphs must be on graph paper, using a straight edge.

29) $y = -\frac{1}{4}x - 1$
$y = -\frac{3}{2}x + 4$

30) $y = \frac{2}{3}x + 1$
$y = -x - 4$

Graph the solution to each system of inequalities. Graphs must be on graph paper, using a straight edge.

31) $4x - y \geq 2$
$x + y \leq 3$

32) $x - 2y \geq -6$
$3x + 2y < -2$

Solve each absolute value equation.

33) $2\left|8m - 6\right| = 84$

34) $\left|3m + 3\right| - 5 = 13$

35) $8\left|8 + 2x\right| + 2 = 18$

36) $10 + 5\left|10r - 7\right| = 75$

Solve each absolute value inequality and graph its solution on a number line.

37) $3 + \left|p + 1\right| \geq 6$

38) $4 + \left|r + 2\right| < 6$

39) $2\left|2x + 5\right| + 1 \leq 23$

40) $5\left|4n + 8\right| + 6 > 26$

Graph each absolute value function.

41) $y = -2\left|x - 3\right| + 1$

42) $y = 2\left|x + 2\right| - 3$

43) $y = 3\left|x - 1\right| - 1$

44) $y = -3\left|x + 3\right| + 4$

Simplify. Your answer should contain only positive exponents.

45) $\dfrac{x^4y^4 \cdot 2x^4y^3}{\left(2x^4y^{-1}\right)^4}$

46) $\dfrac{2x^2 \cdot y^3}{\left(y^{-3}\right)^3}$

47) $\dfrac{\left(y^{-2}\right)^{-1}}{x^{-1}y^{-3} \cdot 2y^{-4}}$

48) $\dfrac{\left(2m^{-2}n^3\right)^{-4}}{m^2n^3 \cdot n^3}$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

49) $\dfrac{\left(x^{\frac{1}{2}}y^{\frac{7}{4}}\right)^{\frac{4}{3}} \cdot x^{\frac{7}{4}}}{x^{\frac{2}{3}}}$

50) $\dfrac{\left(x^2y^{\frac{3}{2}}\right)^{\frac{5}{4}} \cdot \left(x^2y^{-1}\right)^{-\frac{1}{2}}}{yx^{-2}}$

51) $\dfrac{u^{-\frac{3}{2}} \cdot \left(u^{\frac{1}{4}}\right)^{\frac{3}{2}}}{u^{-\frac{7}{4}}}$

52) $\dfrac{xy^4 \cdot x^{-\frac{5}{4}}y^{-1}}{\left(x^2y^{\frac{1}{2}}\right)^{-2}}$

Simplify each expression. Write the answer in standard form.

53) $(3k - k^3) + (8k^2 - 4k + k^3)$

54) $(5a^4 + 7a^3) - (2a^4 + a + 2a^3)$

55) $(8x^3 + 4 + 3x^2) + (2 - 8x^3 + 2x^2)$

56) $(3x + 3x^4 + 5) - (4x - 5 - 4x^3)$

57) $(6x^3 + 2 - 6x) - (2x - 5x^3) - (6x^3 + 2 + 5x)$

58) $(n^4 + n + 5) - (4 + 5n) + (5n^4 - 7n^3 - 6n)$

Find each product. Write the answer in standard form.

59) $7(6n^2 - 5n - 8)$

60) $7k(5k^2 - 7k - 6)$

61) $(5x + 2)(7x - 3)$

62) $(4x - 6)(5x - 3)$

63) $(2a + 3)(7a^2 - 7a + 1)$

64) $(p + 8)(7p^2 - 5p - 6)$

65) $(5n^2 - 2n + 4)(3n^2 + 4n - 2)$

66) $(8x^2 + 4x - 8)(4x^2 - 7x - 1)$

Factor each completely.

67) $b^2 - 8b + 15$

68) $2b^2 - 25b + 63$

69) $2m^2 - m - 45$

70) $25k^2 - 16$

71) $9k^2 - 25$

72) $9x^2 - 12x + 4$

73) $25b^2 + 20b + 4$

74) $10n^2 - 47n + 9$

75) $6n^2 - 28n + 30$

76) $8x^3 - 84x^2 + 40x$

Identify the vertex of each quadratic function. Then graph the function on properly labeled and scaled axes.

77) $f(x) = (x + 4)^2 + 3$

78) $f(x) = -(x + 1)^2 + 2$

79) $f(x) = x^2 - 8x + 13$

80) $f(x) = -\dfrac{1}{2}x^2 + 2x + 1$

Solve each equation by taking square roots.

81) $2x^2 + 4 = 52$

82) $6p^2 + 10 = 298$

Solve each equation by factoring.

83) $x^2 - 6x + 8 = 0$

84) $x^2 + 2x - 24 = 0$

85) $2p^2 - 5p - 3 = 0$

86) $2a^2 - 3a - 14 = 0$

Solve each equation by completing the square.

87) $x^2 - 8x - 4 = -6$

88) $n^2 - 10n - 33 = -6$

89) $8a^2 + 16a - 34 = 8$

90) $9m^2 - 18m + 8 = 9$

Solve each equation with the quadratic formula.

91) $4n^2 + n - 39 = 0$

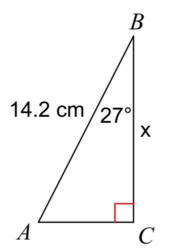
92) $4x^2 - 12x - 13 = 0$

93) $9x^2 = -1 - 12x$

94) $5k^2 = -2k + 3$

Find the measure of each side indicated. Round to the nearest tenth.

95)



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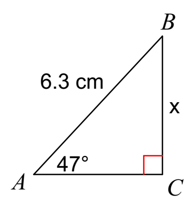
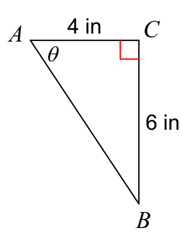


Find the measure of each angle indicated. Round to the nearest tenth.

97)



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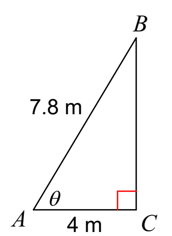
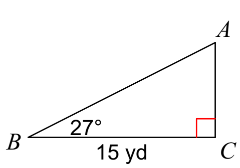


Solve each triangle. Round answers to the nearest tenth.

99)



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