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Holy Name CC HS

Advanced Math Topics - Summer Work

The examples below are types of questions that you as an incoming Advanced Math Topics student should be able to complete. The work is designed to help the student transition into the class.

For exercises 1-3, evaluate each expression for $x = -10$, $y = -15$, & $q = 10$.

1. $2x + y - q =$ _____ 2. $x + y =$ _____ 3. $3y - 2x + q =$ _____

For examples 4-11, solve for x.

4. $X + 7 = 13$ 5. $8 - X = 5$ 6. $5.4 + X = -0.6$ 7. $25 = X - 6$

8. $8.91X = 62.37$ 9. $11X = 36.85$ 10. $X + 5 = 8 \frac{1}{4}$ 11. $1 + X = 7 \frac{1}{2}$

For examples 11-17, combine like terms.

11. $21k + 7 + 34k =$ _____ 12. $24a + 7 - 15a =$ _____
13. $11r - 5r - 18r =$ _____ 14. $12a - 7 + 8a - 6 =$ _____
15. $34x - 7y + 2x + 9y =$ _____ 16. $23r - 21t + r =$ _____
17. $25a - 15b - 25a + 15b =$ _____

For examples 18-25, state what axis or quadrant each point is located.

18. $(5,3) =$ _____ 19. $(0,6) =$ _____ 20. $(-8,2) =$ _____
21. $(7,-4) =$ _____ 22. $(8,0) =$ _____ 23. $(9,-1) =$ _____
24. $(-4,-3) =$ _____ 25. $(-3,8) =$ _____

For examples 26-29, find the slope of the line containing the given points.

26. $(-7,16), (1,0)$ 27. $(8,2),(4,-1)$ 28. $(-3,2),(0,2)$ 29. $(7,-4), (-5,-4)$

For examples 30-34, write each equation in the form $y=mx+b$. Then give the slope and the y intercept of its graph.

30. $3y=2x-9$ 31. $x+y=0$ 32. $4x-2y=8$ 33. $3x+4y=4$ 34. $2y=4x-6$

For examples 35-38, the slope and y intercept of the line are given. Write the equation of the line in the form $y=mx+b$.

35. slope = -3, y intercept = 4

36. slope = 5, y intercept = 0

37. slope = $-\frac{1}{2}$, y intercept = $-\frac{3}{4}$

38. slope = $\frac{5}{8}$, y intercept = 8

For examples 39-41, determine the equation of the line passing thru the given points. Write the equation in the form $y = mx+b$.

39. A(-2,0); D(0,4)

40. C(0,0); B(2,-3)

41. M(0,5); N(-1,-4)

For examples 42-44, determine the equation of the line passing through the given points. Write the equation in general form.

42. S(6,-2); T(0,3)

43. F(-4,-1); G(4,-2)

44. V(0,-3); W(12,10)

For examples 45-47, assume that Y varies directly as X.

45. If $y = -3$, when $x = 1$, find y when $x = 4$.

46. If $y = 4$ when $x = 2$, find y when $x = 6$.

47. If $x = -3$, when $y = 12$, find x when $y = 1$.

For examples 48-53, solve.

48. The measure of one angle of a triangle is 90 degrees. The measure of each of the other two angles is X degrees. Find the measure of the equal angles.

49. The measures of the angles of a triangle can be represented by m , $3m$, and $8m$. Find the measure of each angle.

50. Dan's bank contains equal numbers of quarters, dimes, and nickels. The total value is \$10.00. How many of each kind of coin are there?

51. Elaine has only dimes and quarters in her purse. The total value is \$2.50. There are 3 quarters more than dimes. How many quarters are there?

52. A piece of string is cut into 3 pieces. One piece is 2cm longer than the shortest piece. How long is each piece?

53. Gina has \$2 more than three times the amount Fred has. When Gina gave Fred \$5, Fred then had $\frac{1}{2}$ as much as Gina. How much did Gina have at first?

For examples 54-57, write an equation, then solve the problem.

54. The length of a rectangle is 8 inches more than twice its width. The perimeter is 112 inches. Find the length and width of the triangle.

55. The length of a rectangle is 7 times its width. The perimeter of the rectangle is 64 centimeters. Find the dimensions of the rectangle.

56. The longest side of a triangle is twice the length of the shortest side. The third side is four inches shorter than the longest side. Find the lengths of the sides of the triangle if the perimeter is 96 inches.

57. The third side of an isosceles triangle is 9 centimeters longer than the each of the equal sides. The perimeter is 27 centimeters. Find the length of each side.

For examples 58-66, solve and check.

58. $-3r - 8 = -5r + 12$ 59. $-6x - 7 = -5x + 3$ 60. $\frac{1}{2}y + 6 = y - 4$

61. $t - 7 = 3\frac{1}{2} + 2t$ 62. $0.7a + 0.3a = 2a - 4$ 63. $-4(x+2) = -6x+2$

64. $2x + 3(x-9) = -(3+5y)$ 65. $5x = 2x + 12$ 66. $7x = 3x + 24$