

Donovan Catholic High School

Review Packet for Incoming Geometry Honors Students

All work must be shown on loose-leaf and stapled to the review. It will be checked on the second day of class.

Name: _____

Teacher: _____

Simplify:

1. $-3 + (-8) + 12$

2. $13 - 7 - 15$

3. $(8)(-6)(-1)$

4. $-150 \div (-6)$

5. $\frac{-5}{6} - \frac{5}{9}$

6. $-\frac{3}{8} \cdot \frac{-4}{15}$

7. $\frac{-5}{12} \div \frac{15}{36}$

8. $(-2)(2)^2$

9. $(-3)^3 (-2)^2$

10. $-15 + 23 - 8$

Solve each equation:

11. $7x - 5 = 2x - 20$

12. $-x - 4 = -3x - 16$

13. $5x + 2(3x + 1) = 3x + 5$

14. $5[2 - (2x - 4)] = 2(5 - 3x)$

15. $4(x + \frac{1}{2}) = 8(x + \frac{3}{4})$

16. $7x - 2(x + 6) = -2$

17. $\frac{x+3}{12} = \frac{5}{6}$

18. $\frac{9}{x+2} = \frac{3}{x-2}$

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

Solve AND graph on a number line:

20. $8x \leq 7x - 4$

21. $-3x + 7 < 2$

22. $7 - \frac{1}{2}x \leq 1$

23. $3x \geq 12$ Or $4x \leq 10$

24. $11 \leq x + 3 < 14$

Find the slope and the y-intercept for each equation below:

25. $3x + 2y = 8$

26. $y = -2x + 7$

27. $x = 3$

28. $y = 3$

29. $x + y = 3$

Given the two points, find the slope:

30. $(5, -1)$ and $(3, 2)$

31. $(-3, -6)$ and $(9, 2)$

32. $(7, 3)$ and $(-2, 5)$

33. $(7, 2)$ and $(7, 5)$

34. $(0, -1)$ and $(2, -1)$

Write the equation of the line connecting the points a) in Point Slope form, b) in Slope-Intercept form, and c) in Standard form.

[The points given are the same as in #30 – 34]

35. $(5, -1)$ and $(3, 2)$

36. $(-3, -6)$ and $(9, 2)$

37. $(7, 3)$ and $(-2, 5)$

38. $(7, 2)$ and $(7, 5)$

39. $(0, -1)$ and $(2, -1)$

Find the slope using the given information:

40. Given the equation, $y = 3x + 7$, what is the slope of a line parallel to this line?
41. Given the equation, $2x + y = 8$, what is the slope of a line perpendicular to this line?
42. What is the slope of a line that is parallel to a vertical line?
43. What is the slope of a line perpendicular to a horizontal line?

Using graph paper, graph each of the following:

44. $y = 2x + 1$ 45. $3x + y = 9$ 46. $2x + 4y = 8$
47. $y = 3$ 48. $x = -3$

Factor:

49. $7x^2 + 21$ 50. $25ab^4 + 20a^3b^2$
51. $4x^3y - 16x^3 + 24y$ 52. $3x^2t^3 + 15xt^2$
53. $mr + 3m + 2r + 6$ 54. $xy + 5x + 3y + 15$
55. $x^2 - 49$ 56. $4x^2 - 25$
57. $x^2 + 6x + 9$ 58. $49x^2 - 4y^2$
59. $x^2 + 14x + 24$ 60. $x^2 + 6x + 8$
61. $x^2 + 10x - 39$ 62. $x^2 - x - 6$

Factor completely:

63. $4x^2 - 4$ 64. $2x^2 + 4x + 24$ 65. $3x^2 - 6x - 45$

Solve by factoring and using the zero product property:

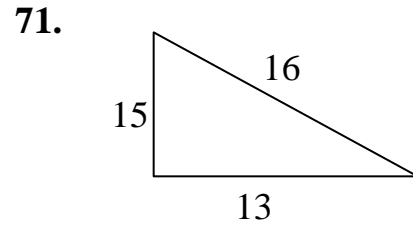
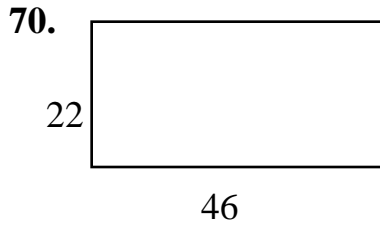
66. $(x + 1)(x - 5) = 0$

67. $x^2 + 13x + 22 = 0$

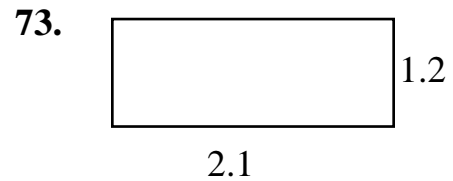
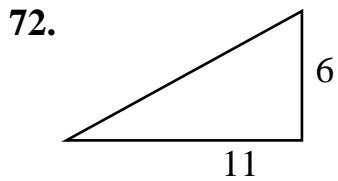
68. $x^2 - 3x = 18$

69. $x^2 - 2x - 15 = 0$

Find the Perimeter:



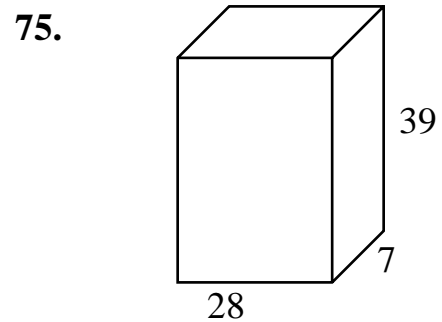
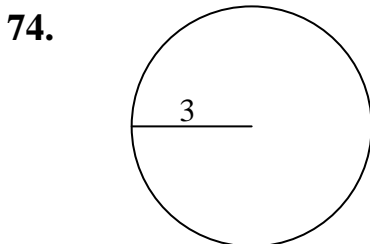
Find the Area:



Find the Circumference AND the Area:

$[C = \pi d \text{ or } 2\pi r, A = \pi r^2]$

Find the Volume: $[V = lwh]$



Solve each absolute value equation:

76. $|x + 5| = 7$

77. $|2x - 3| = 9$

78. $2|x - 8| = -4$

Solve and graph the following absolute value inequalities on a number line:

79. $|3x - 2| < 7$

80. $|x + 9| > -6$

81. $|4x - 2| \geq 0$

Solve each system by BOTH elimination and substitution:

82. $3x + y = 13$
 $2x - y = 2$

83. $y = -3x$
 $x - 6y = 38$

84. $2x + 3y = 4$
 $-4x - 6y = -8$

Graph each absolute value function and state the domain and range:

85. $y = |x - 3| - 2$

86. $y = 2|x + 1| - 5$

Graph the system of inequalities and label the solution set S:

87. $x - 2y \leq 8$
 $x + y \geq 5$