

Carusi Middle School

SUMMER



ASSIGNMENT

for students entering

Geometry Honors

(Students must also complete their grade level packet)

Show all work on each page using pencil only. If more room is required, attach lined paper to the packet.

*****Please bring this packet with you the first day of school *****

NAME: _____

Topics

- Pythagorean Theorem
 - Finding the Equation of a Line
 - Distance / Midpoint Formula
 - Completing the Square
 - Factoring
 - Exponents
 - Radicals
-

Write the equation of the line going through the two given points.

1) $(-18, -5)$ and $(10, 9)$

4) $(5, 6)$ and $(12, 6)$

2) $(1, -3)$ and $(3, 1)$

5) $(-10, -4)$ and $(5, 2)$

3) $(-4, 3)$ and $(-1, 6)$

6) $(0, 5)$ and $(7, 2)$

Solve the equation by Factoring

1) $x^2 + 7x + 6 = 0$

7) $x^2 - 5x + 4 = 0$

2) $x^2 + 3x - 28 = 0$

8) $x^2 + 10x + 25 = 0$

3) $x^2 - 2x - 24 = 0$

9) $x^2 - 9 = 0$

4) $x^2 + 12x + 32 = 0$

10) $x^2 + 81 = 18x$

5) $x^2 - 5x + 4 = 0$

11) $x^2 + 7x - 30 = 0$

6) $x^2 + 7x + 6 = 0$

12) $x^2 - 11x + 30 = 0$

Use the quadratic formula to solve the equation.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1) $x^2 - 4x + 3 = 0$

2) $x^2 + 9x + 20 = 0$

3) $x^2 + 3x = 4$

4) $-x^2 + x + 2 = 0$

5) $8x = -15x^2 - 1$

6) $-6x + 3x^2 = -1$

7) $-9x^2 + 1 = 5x$

Find the term that should be added to the expression to create a perfect square trinomial.

1) $x^2 - 16x$

2) $x^2 - \frac{3}{4}x$

3) $x^2 + \frac{2}{9}x$

Solve the equation by completing the square

1) $x^2 + 6x = -5$

2) $x^2 + 4x - 7 = 0$

3) $3x^2 - 6x - 1 = 0$

4) $5x^2 - 8x + 4 = 0$

5) $5x^2 - 8x + 4 = 0$

Factor

1) $49x^2 - 64$

3) $x^2 - 6x - 27$

2) $x^2 + 7x + 12$

4) $6x^2 - 23x - 18$

Solve for x.

1) $9x^2 - 100 = 0$

2) $x^2 - 7x - 30 = 0$

3) $3x^2 + 4x - 15 = 0$

4) $4x^2 + 20x + 25 = 0$

5) $8 - x^3$

6) $x^2 - 5x + 11 = 0$

Simplify

1) $\sqrt{63}$

2) $\sqrt{80}$

3) $\sqrt{864}$

4) $\sqrt{98}$

5) $\sqrt{220}$

Write each mixed radical in simplest form.

1) $3\sqrt{45}$

2) $-12\sqrt{27}$

3) $2\sqrt{720}$

4) $-15\sqrt{40}$

5) $7\sqrt{108}$

Simplify by multiplying. Make sure your answers are in simplest form.

1) $(3\sqrt{5})(8\sqrt{2})$

2) $(2\sqrt{6})(\sqrt{3})$

3) $(-5\sqrt{10})(-6\sqrt{15})$

Simplify by adding or subtracting.

1) $7\sqrt{2} - 10\sqrt{2}$

2) $8\sqrt{7} - 5\sqrt{7} + 12\sqrt{7}$

3) $\sqrt{13} + 3\sqrt{13} - 9\sqrt{13}$

Write all radicals in simplest form, then simplify by adding or subtracting.

1) $2\sqrt{27} + 5\sqrt{3}$

2) $2\sqrt{20} - \sqrt{500}$

3) $3\sqrt{24} - 3\sqrt{384} - \sqrt{96}$

Simplify by dividing.

1) $\frac{\sqrt{21}}{\sqrt{3}}$

2) $\frac{-15\sqrt{40}}{-5\sqrt{5}}$

3) $\frac{36\sqrt{160}}{-3\sqrt{8}}$

Simplify by multiplying

1) $\sqrt{5} \times \sqrt{6}$

2) $2\sqrt{5} \times \sqrt{3}$

3) $(3\sqrt{2})(2\sqrt{3})$

4) $(-4\sqrt{2})(3\sqrt{2})$

5) $(3\sqrt{2})^2$

6) $(2 + 2\sqrt{3})(5 - \sqrt{3})$

Factor each completely.

1) $16n^2 - 9$

2) $4m^2 - 25$

3) $16b^2 - 40b + 25$

4) $4x^2 - 4x + 1$

5) $9x^2 - 1$

6) $n^2 - 25$

7) $n^4 - 100$

8) $a^4 - 9$

11) $98n^2 - 200$

12) $3 + 6b + 3b^2$

13) $400 - 36v^2$

14) $100x^2 + 180x + 81$

15) $10n^2 + 100n + 250$

16) $49n^2 - 56n + 16$

Find the midpoint of the line segment with the given endpoints.

9) $(-4, 4), (5, -1)$

10) $(-1, -6), (-6, 5)$

11) $(2, 4), (1, -3)$

12) $(-4, 4), (-2, 2)$

13) $(5, 2), (-4, -3)$

14) $(-1, 1), (5, -5)$

Find the distance between the two points.

19) $(0, -2), (-5, -1)$

20) $(6, 4), (-5, -1)$

21) $(3, 8), (9, 10)$

22) $(10, 1), (9, -4)$

23) $(-8, 10), (-6, 7)$

24) $(-5, 6), (8, -4)$

Honors Geometry Algebra Review

This assignment should be completed without the use of a calculator – Except where specified. Leave all answers in simplified radical form or improper fractions (no decimals).

Solve.

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

2. $\frac{1}{2}x + \frac{3}{2}x = x + \frac{9}{2} - \frac{1}{2}x$

3. $\frac{3}{2}x + \frac{1}{5}x = \frac{11}{6}x - \frac{2}{15}$

Solve each equation for the indicated variable.

4. $A = \frac{bh}{2}$, for b

5. $A = \pi r^2$, for r

6. $P = 2w + 2l$, for w.

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

8. $A = \frac{(b_1 + b_2)h}{2}$, for b_1

9. $d = \sqrt{x^2 + y^2}$, for y

Solve.

10. $\frac{27}{4} = \frac{m}{4}$

11. $\frac{x}{4} = \frac{9}{x}$

12. $\frac{7}{2} = \frac{a+3}{5}$

13. $\frac{4x-2}{3} = \frac{2x}{7}$

14. $\frac{x-2}{3} = \frac{2x+8}{6x}$

Solve.

15. $7 + 8y > 2y - 12$

16. $5 - 4y < 37$

17. $6m - 14 > 18 - 10m$

Simplify the following expressions.

18. $\frac{7^5}{7^3}$

19. $\left(\frac{4}{3}\right)^{-2}$

20. $(x^4y^3)(x^5y)$

21. $(-2x^5y^6)^3$

22. $\frac{3a^2x^3}{18a^4x^2}$

23. $\left(\frac{12a^4x^3}{18a^4x^7}\right)$

Solve by completing the square.

62. $x^2 + 8x - 17 = 0$

63. $x^2 - 4x - 16 = 0$

64. $x^2 + 10x + 18 = 0$

Solve by the quadratic formula.

65. $3x^2 + 8x + 2 = 0$

66. $5x^2 + 3x - 16 = 0$

67. $3x^2 + 8x + 10 = 0$

For each of the following equations or inequalities:

a) identify the slope

b) identify the x- and y-intercept

c) graph

68. $y = x - 2$

69. $2x + 4 = y$

70. $5y + 2x = 10$

71. $2y + 4x = 14$

72. $3y - 4x = 9$

73. $x = 4$

74. $y = -5$

75. $y \geq 3x + 1$

76. $4y < 6x - 8$

77. $2y - 3x \leq 12$

78. $3x - 6y > 36$

Find the slope of the line that passes through the following points.

79. (6, 8) & (-2, -4)

80. (-3, 0) & (-3, 5)

81. (5, 1) & (-1, 1)

82. (3, 4) & (5, -8)

Write the slope-intercept form of the equation of each line.

83. $3x - 2y = -16$

84. $13x - 11y = -12$

85. $6x + 5y = -15$

Find the equation of the line through the given point with given slope. Write the answer in slope-intercept form.

86. through (1, 2); $m = 7$

87. through (3, 1); $m = -1$

88. through (-2, 5); $m = -4$

89. through (2, 1); undefined slope

90. through (6, -2); $m = 0$