GLENELG HIGH SCHOOL

GT Geometry

Summer Pre-View Packet

DUE THE FIRST WEEK OF SCHOOL

The problems in this packet are designed to help you review topics from previous mathematics courses that are important to your success in

GT Geometry.

Show all work that leads you to each solution on separate sheets of paper. You may use your notes from previous mathematics courses to help you. Additional copies of this packet may be obtained from the Main Office in your school or printed from the school's website.

ALL work should be completed and ready to turn in on the FIRST WEEK of school. This packet will count as part of your first quarter grade.

ENJOY YOUR SUMMER!! WE ARE LOOKING FORWARD TO SEEING YOU IN THE FALL.

Student Name: _____

School: _____

Date: _____

HSA ALGEBRA/DATA ANALYSIS FORMULAS

Equations of a Line

Standard Form:
$Ax + By = C$
where A and B are not both zero

Slope-Intercept Form:
$y = mx + b$ or $y = b + mx$
where m = slope and b = y-intercept

Point-Slope Form:
$y - y_1 = m(x - x_1)$
where m = slope, (x_1, y_1) = point on line

Slope Formula

Let (x_1, y_1) and (x_2, y_2) be two points in the plane.

slope = $\frac{y_2 - y_1}{x_2 - x_1}$ where $x_2 \neq x_1$

Name _____

Be sure to show all your work for the problems.

I. Determine the slope of the line through each pair of points.

1. (5, 1) and (2, 7)

2. (5, 3) and (-2, 3)

3. $(-\frac{1}{2}, -2)$ and $(-\frac{3}{2}, 1)$

4. (2, -4) and (2, 6)

II. Determine the equation for each line, using the information given.

5. slope 5, containing the point (3,2)

6. containing the points (0,2) and (2,0)

7. containing the points (-1, 2) and (5, 6)

III. Solve for x.

8. $5x + 3 = -12$

9. $(6x - 8) - (5x + 9) = 3$

10. $7x - 8x + 4 = 5x - 2$

11. $3(x - 2) = 18$

12. $(3x + 2) – 2(x + 4) = 7$

13. $\frac{x}{3} = \frac{8}{15}$

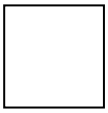
14. $\frac{18}{x} = 6$

15. $\frac{5}{7} = \frac{10}{x+2}$

IV. Write an expression for both the *area* and *perimeter* of each figure.

16. rectangle

17. square



V. Using the given information, determine each answer

18. Area and circumference of a circle with radius 4 in.

19. Area and circumference of a circle with diameter 9 in

20. Circumference of a circle with area 36π square centimeters

VI. Simplify

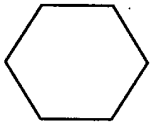
21. $\sqrt{81}$

22. x^3x^6

23. $\frac{4x^5y^{-2}}{2x^8y}$

24. $(5x^3y^2)^2$

VII. Identify each figure by name.

25. 

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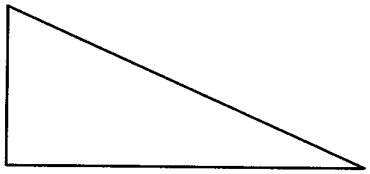
26. 

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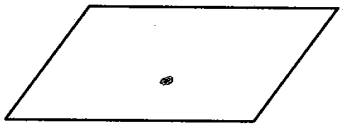
27. 

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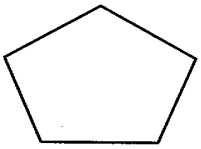
28. 

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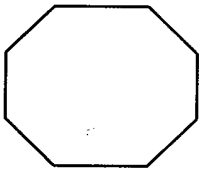
30. 

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VIII. Solve each equation either by factoring or by using the quadratic formula (If $ax^2 + bx + c = 0$, then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ **.)**

31. $x^2 + 3x = 0$

32. $x^2 - 5x - 24 = 0$

33. $3x^2 + x - 4 = 0$

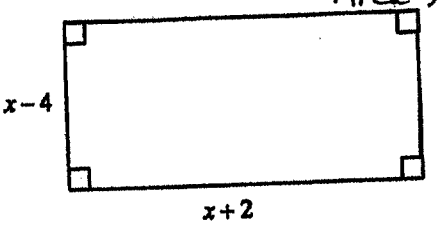
D. Binomial Multiplication

Warm-up: Simplify

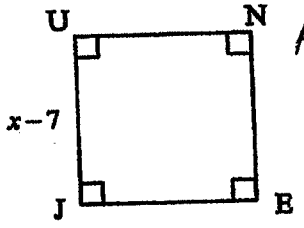
1. $(x+2)(x+5)$ 2. $(3x+1)(x-4)$ 3. $(x-5)(x+5)$ 4. $(x+6)^2$

For problems 1–4, write an expression for the area of each figure. Your answer should be in simplified form.

1. Area = lw

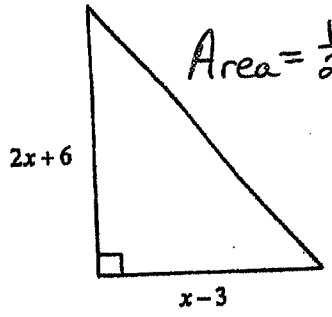


2. Area = side^2

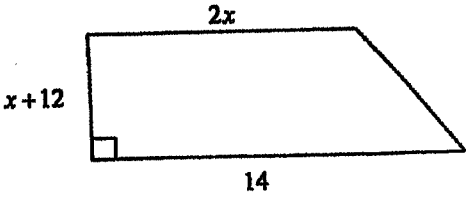


JUNE is a square.

3. Area = $\frac{1}{2}bh$



4.



Area = $\frac{1}{2}h(b_1+b_2)$

Solve by factoring
Substitute 0 for y and solve

1. $y = (x+4)(x+4)$
2. $y = (x-5)(x-2)$
3. $y = x(x-12)$
4. $y = (3x+6)(x-4)$
5. $y = (2x-3)(3x-2)$

Solve by factoring

6. $0 = x^2 + x - 20$
7. $0 = x^2 - 4$
8. $0 = x^2 + x - 12$
9. $x^2 + 8x = 9$
10. $x^2 - 5x = 6$
11. $x^2 - 25 = 0$
12. $3x^2 + 5x + 2 = 0$
13. $x^2 - 8x = -16$
14. $3x^2 + 8x + 4 = 0$
15. The area of a rectangle is 40 square centimeters. Find the value of x, if the sides are x and (x+6)
16. The area of a square is 16 square centimeters. Find the value of x, if the sides are all (x-4)

Apply the Quadratic Formula

$ax^2 + bx + c = 0$ $\qquad$ $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Solve each equation using the quadratic formula.

1. $x^2 + 4x + 3 = 0$

2. $x^2 - 7x + 10 = 0$

3. $x^2 + 5x + 6 = 0$

4. $x^2 - 3x - 4 = 0$

5. $x^2 + 2x - 8 = 0$

6. $x^2 - 5x + 2 = 0$

7. $x^2 + 3x - 7 = 0$

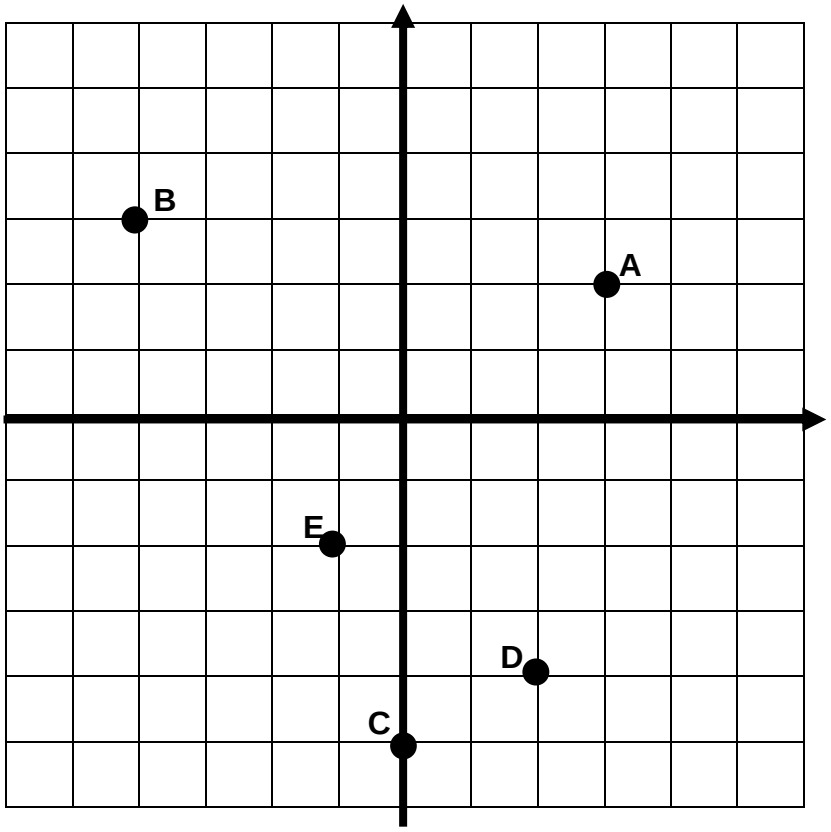
8. $2x^2 - 5x + 2 = 0$

9. $2x^2 - 3x - 5 = 0$

10. $3x^2 + 5x + 1 = 0$

11. $3x^2 - 2x - 8 = 0$

IX. Use the graph to answer #34 – 35



34. Give the coordinates of each lettered point. (each block represents one unit)

A _____ B _____ C _____ D _____ E _____

35. Tell what quadrant each point is in.

A _____ B _____ C _____ D _____ E _____

X. Answer in complete sentences where appropriate. Show all your work to receive full credit.

36. Square Deal Pizza offers square pizza that is 15 inches long on each side. A cheese pizza costs $9.00. Roundoff Pizza offers circular pizza that is 16 inches in diameter. A cheese pizza at Roundoff costs $8.75.

- Which restaurant's pizza is bigger? Justify your answer using words, symbols, or both.
- Which restaurant's pizza is a better buy? Justify your answer using words, symbols, or both.

37. A juice pitcher holds 1.5 gallons of liquid. How many 8-ounce glasses of juice can be poured from a full pitcher? (1 gallon = 128 ounces) Explain your answer by writing or describing the steps you used to solve the problem.

Simplify each radical expression.

1) $\sqrt{289}$	2) $\sqrt{80}$
3) $\sqrt{845}$	4) $\sqrt{294}$
5) $\sqrt{12} \bullet \sqrt{28}$	6) $\sqrt{92} \bullet \sqrt{18}$
7) $\sqrt{50} \bullet \sqrt{80}$	8) $\sqrt{35} \bullet \sqrt{14}$

9) $\sqrt{24} \bullet \sqrt{26}$	10) $\sqrt{14} \bullet \sqrt{72}$
11) $\sqrt{196}$	12) $\sqrt{48}$
13) $\sqrt{500}$	14) $\sqrt{160}$
15) $\sqrt{18} \bullet \sqrt{15}$	16) $\sqrt{32} \bullet \sqrt{168}$