

J Frank Dobie High School

Summer Packet

For Incoming Pre-AP Geometry Students

Teachers – Mrs. Capell, Mrs. Mull, Mr. Tamez

This summer packet is designed to help you practice using concepts from Algebra 1 so that you are prepared to study Pre-AP Geometry in the fall. This packet is due the first day of class for a major grade. All work must be shown for credit.

For additional copies of this packet go to <http://www.jfrankdobie.org> and look under “Upcoming Events”.

Here are some websites that you might find helpful if you get stuck.

<http://www.math.com/>

(the pre-algebra and algebra sections will be most helpful)

<http://www.mathleague.com/help/help.htm>

<http://www.freemathhelp.com/algebra-help.html>

(this has text lessons and video lessons)

<http://mathforum.org/library/drmath/drmath.middle.html>

Name _____

Pre-AP Geometry Summer Packet Answer Sheet

- **All work must be shown in the packet. Answers must be recorded on this page. Both the work and the answers will be graded. This packet will be due on the first day of class.**

PART I:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

7. _____ 8. _____ 9. _____ 10. _____

11. _____ 12. _____ 13. _____ 14. _____

15. _____ 16. _____

17. _____ 18. _____ 19. _____

20. _____ 21. _____ 22. _____ 23. _____ 24. _____

25. _____ 26. _____ 27. _____ 28. _____

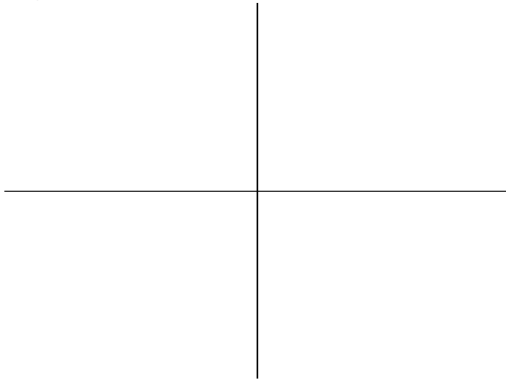
29. _____ 30. _____ 31. _____

32. _____ 33. _____ 34. _____

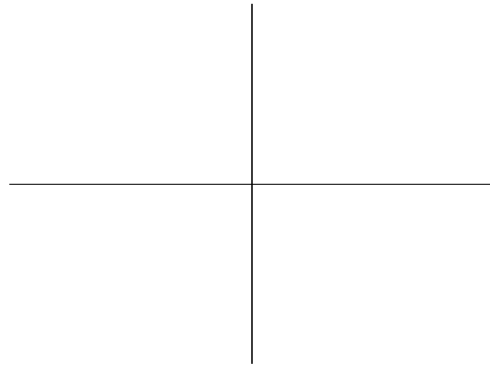
(Continued on the back)

Label graphs

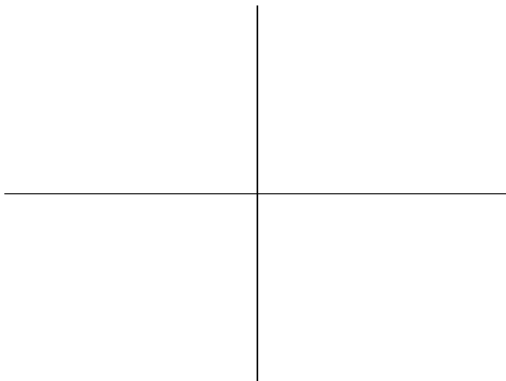
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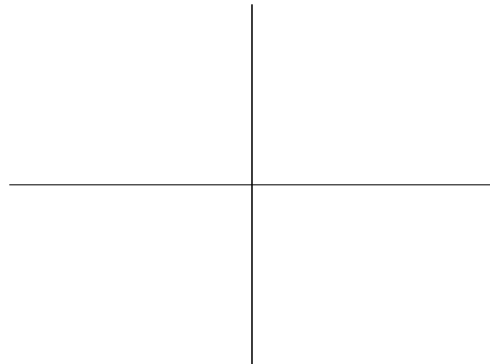
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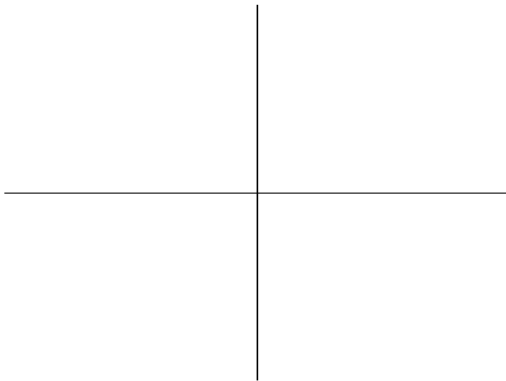
37.



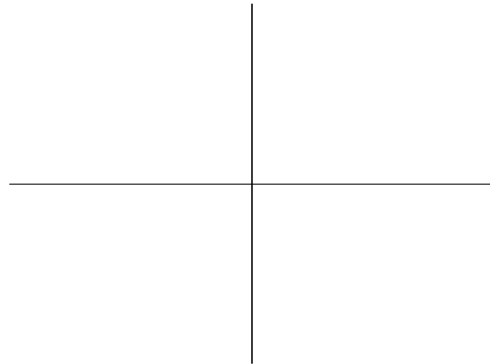
38.



39.



40.



41. _____ 42. _____ 43. _____ 44. _____ 45. _____

46. _____ 47. _____ 48. _____ 49. _____

50. _____ 51. _____

PART 2:

1. a. _____ b. _____ c. _____

2. _____ 3. _____ 4. _____ 5. _____ 6. _____

Please show all your work to receive credit.

Part 1

SIMPLIFY

1. $\frac{-5}{8} \div \frac{-6}{5}$

2. $\frac{3}{4} \times \frac{10}{27}$

3. $\frac{-52}{69} \div \frac{13}{4}$

4. $\frac{10}{9} + \frac{4}{7}$

5. $-93 - (-84 - -41 - (-56))$

6. $4x(2y - 3z)$

7. $2x - [4 - 3(2^5 + 18y)]$

SOLVE

8. $5x - 7 = 2x + 20$

9. $10 - 3x = 2x - 8x + 20$

10. $\frac{2}{3} + \frac{1}{4}x = \frac{1}{3}$

11. $\frac{12}{30} = \frac{10}{x}$

12. $\frac{x-4}{3} = \frac{7}{8}$

13. $3(m - 8) \geq 4(m + 4)$

14. $\frac{x}{4} - \frac{1}{6} \leq 12$

15. $0.3[4(x - 2) + x] < 0.3x$

16. $6(z - 5) < 5(7 - 2z)$

17. Find the length of the diagonal of a rectangle whose length is 12 inches and width is 7 inches.

18. A car travels 150 km on 12 liters of gas. How many liters are needed to drive 500 km?

19. A phone company charges \$22.50 per month plus \$.08 per minute for local calls. How many calls were made if the monthly bill was \$25.40?

SIMPLIFY

20. $(3x - 4y) + (8x + 6y)$

21. $(6 - 4g - 9h) + (12g - 4h - 6j)$

22. $(g^3 - 2g^2) - (5g^2 - 7)$

23. x^2x^5

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

25. $(4x + 7)(5x - 2)$

26. $(2x + 3)^2$

27. $\frac{24x^5}{8x^3}$

28. $\frac{x^2 + 10x + 24}{x + 6}$

FACTOR

29. $3x^6 - 5x^3 + 2x^2$

30. $x^2 - 14x + 49$

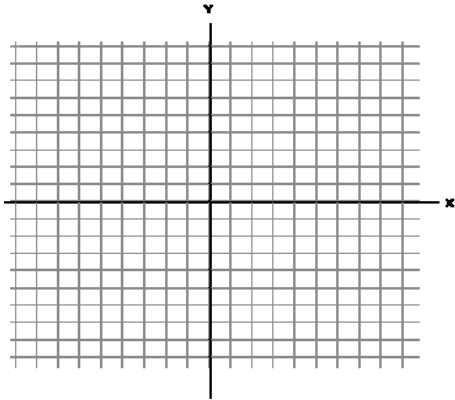
31. $x^2 + 8x + 15$

32. $x^2 - 6x - 16$

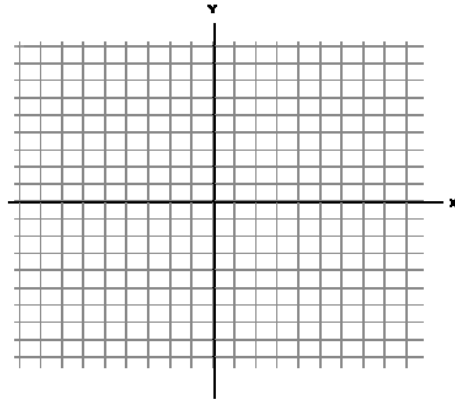
33. $x^2 - x - 42$

34. $x^2 + 7x - 60$

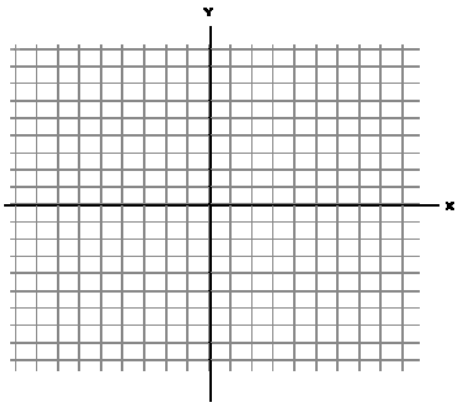
35. Graph using a table of values:
 $2x + 3y = 8$



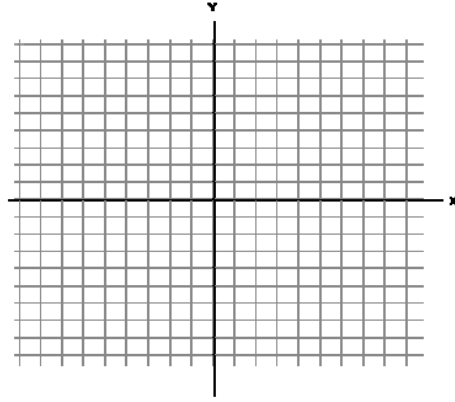
36. Graph using intercepts:
 $6x + 2y = 18$



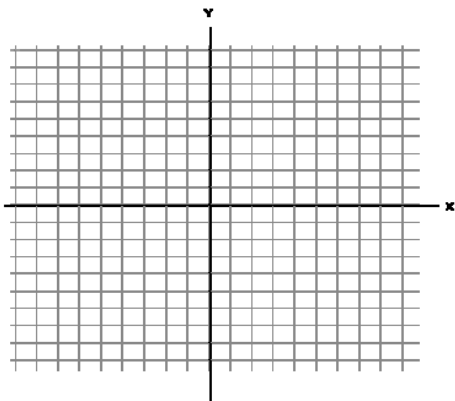
37. $4x - 3y = 12$



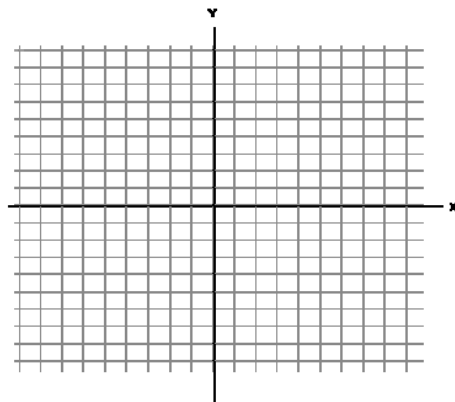
38. $x = -4$



39. $y = 3$



40. Solve by graphing:
 $x + 2y = 0$
 $x + y = -3$



SOLVE ALGEBRAICALLY

41. $x = y + 2$
 $3x + y = 6$

42. $x + y = 9$
 $2x - y = 6$

43. $x - y = 0$
 $2x - 3y = 7$

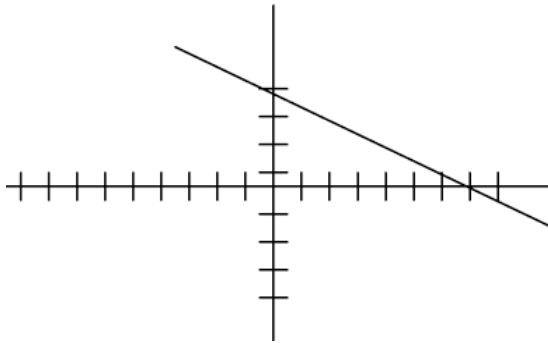
Find the slope using the information below.

44. $3x + 2y = 7$

45. $7x - y = 2$

46. $(3,5)$ and $(-4,7)$

47.



Find the midpoint of the line segments with the given end points using the midpoint formula $(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$.

48. $(8,4)$ and $(12,2)$

49. $(-2,-7)$ and $(6,-5)$

Find the distance between the given points using the distance formula:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

50. $(3,4)$ and $(6,8)$

51. $(3,7)$ and $(-2,-5)$

Part 2 – Open Ended

1. Two local health and fitness centers, Fitness First and Healthy Life are in your neighborhood. The copies for their ads are shown below.

Fitness First
\$49.90 per month for the first family member
plus
\$29.00 per month each additional family member



Healthy Life
\$65.00 per month for the first family member
plus
\$21.00 per month each additional family member

- a. Write an equation that shows C , the total monthly charges for a family with N members at Fitness First.
- b. Write an equation that shows C , the total monthly charges for a family with N members at Health Life.
- c. Find the number of family members for which the charges for the health and fitness centers are equal.
2. Maya made the designs shown below using happy face stickers.

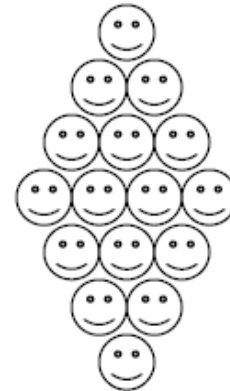
3 rows



5 rows



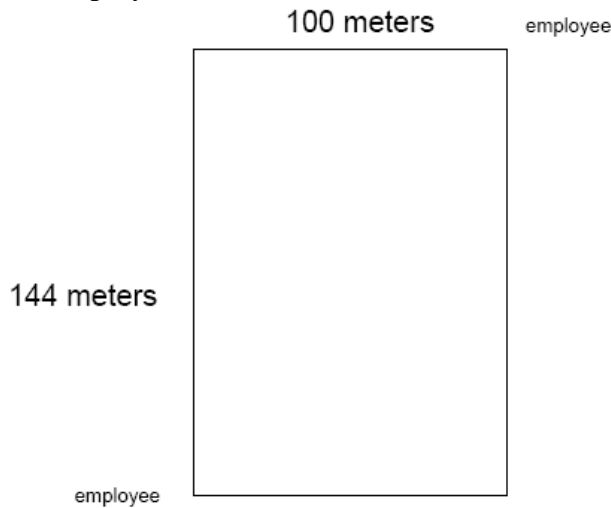
7 rows



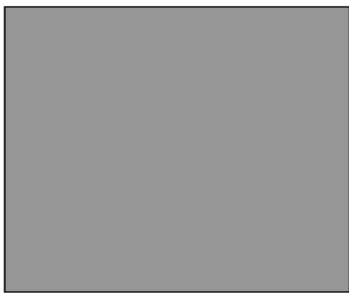
How many stickers would she need to make a design with 25 rows in the same pattern?
Show the mathematics you used to get your answer and explain your reasoning.

3. Hugo ordered a large cheese pizza with a diameter of 10 inches. Using the formula for area $A = \pi r^2$ and 3.14 as an approximation for π , find the area of the pizza.

4. A discount store has a rectangular floor with an area of 14,400 square meters. To test the range of its silent pager system, two employees stood in opposite corners of the floor, and one paged the other. To the nearest meter what was the diagonal distance between the two employees?



5. Use an inch ruler for the following problem. The scale drawing shows a city block in Hartford where new construction is taking place. What is the area of the city block in square feet?



Scale: 1 inch = 120 feet

6. The penalty clause in a road construction contract reads, "The construction contractor must pay a fine of \$1500 plus \$375 per day for each day that work continues after the promised finish date of June 1st." If the contractor paid a fine of \$10,875, how many days was the construction late?