

Name: _____

Pre-Algebra Summer Review Packet

This is a review of Pre-Algebra topics for all students entering Algebra in the fall. The packet will be collected by your Algebra teacher the first week of school. This assignment will be counted for a grade. ALL WORK must be shown in order to receive full credit. Answers should be written on the attached answer key.

#1-6. Simplify. You must show all your work.

1. $-2\frac{1}{4} \cdot 3\frac{2}{3} + 5\frac{1}{2}$

2. $\frac{11}{2} \div 1\frac{2}{3} - \frac{7}{8}$

3. $\frac{2(-3)+(7-10)}{-5^2+2(8)}$

4. $-48 \div 4 + 2^4 \cdot (-3)$

5. $14 - 10 \cdot 3 + (2 - 5)^2$

#6-7. Evaluate the following if $a = 4$, $b = -3$, and $c = 5$.

6. $a - b^2 + ca$

7. $\frac{2b - 3c + a}{6a - c^2}$

#8-9. Write an algebraic expression for each verbal expression.

8. The sum of one-fourth of a number squared and seven

9. Four less than five times a number

#10-13. Simplify each expression completely.

10. $\frac{1}{2}(4x + 6y - 10)$

11. $-4x - 6y + 10y - x$

12. $2(x - 5) + 4(3x - 2)$

13. $7y - 3(4x - 1) + 6y - 9x$

#14-19. Use a proportion or equation to solve. You must show the proportion or equation and work. Round to the nearest hundredth if necessary.

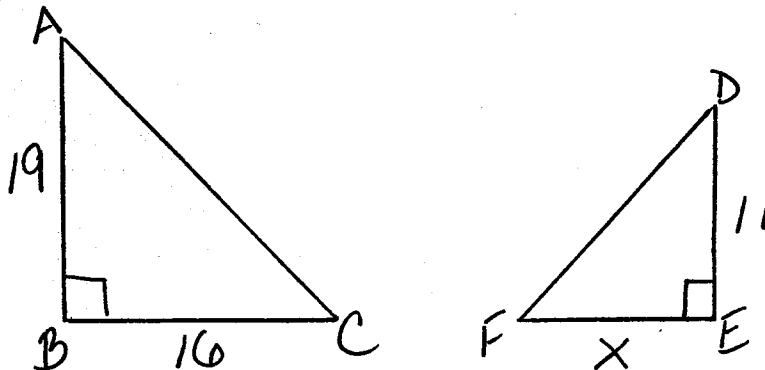
14. My friends and I went out to dinner. We left the waitress \$20, which was a 16% tip. How much was our bill before the tip?

15. A jacket you want to buy was originally priced at \$175. It is on sale for \$131. By what percent was the price reduced? (Approximately)

16. You want to buy a television that costs \$250. You have a 15% off coupon and then you have to pay 7% tax. How much do you have to pay for the television?

17. You are making a recipe for cookies. The recipe calls for $\frac{3}{4}$ cup of butter for 3 dozen cookies. How many cups of butter do you need if you want to make 180 cookies?

18. Triangle ABC is similar to triangle DEF. What is the length of the missing side?



19. Katie and Tara are making crafts for their school's craft fair. For every 7 Tara makes, Katie makes 9. If they made a total of 240 crafts, how many did each girl make?

#20-25. Solve the following equations.

20. $-3x - 3 = 12$

21. $4(3x - 1) - 2x = 16$

22. $\frac{5}{6}x - 7 = \frac{2}{3}$

23. $-2x + 8 + 4x = -10 + 2x + 18$

24. $2(3x - 4) + 11 = -x - 5 + 7x$

25. $\frac{1}{2}x - \frac{3}{4}x - 8 = -7$

#26-29. Write and solve an equation for each.

26. 331 students went on a field trip. Six buses were filled equally and 7 students traveled in cars. How many students were on each bus?

27. Jill sold half of her comic books and then bought sixteen more. Now she has 36 comic books. With how many comic books did she begin?

28. How old am I if 400 reduced by twice my age is 344?

29. Thomas had \$550 in his bank account and was spending/withdrawing \$20 per week. Jillian had \$95 in her account and was saving/depositing \$15 per week. In how many weeks will Thomas and Jillian have the same amount of money in their accounts?

#30-31. Solve each inequality. Graph the solution on the number line on answer key.

30. $4x + 7 > -1$

31. $-2(x - 7) \leq -4x - 10$

#32-33. Write and solve an inequality for each.

32. 10 more than 8 times a number is at most 50.

33. 4 times the difference between a number and 6 is at least 12.

#34-35. Find the slope of the line through the given points.

34. $(-2, -4)$ and $(1, -5)$

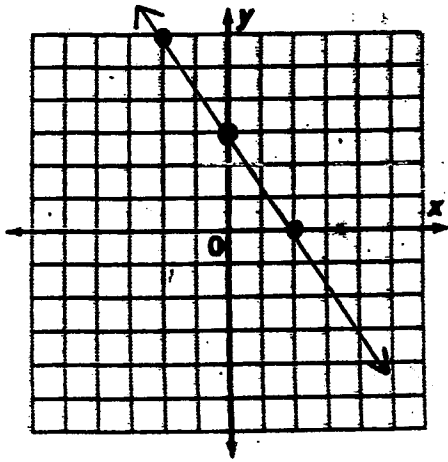
35. $(-3, 7)$ and $(-3, -11)$

36. What is the y-intercept of the graph of $-3x - 4y = -12$?

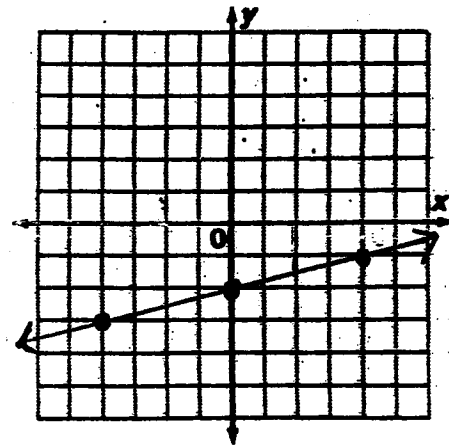
37. What is the x-intercept of the graph of $2x - 5y = -10$?

#38-39. Give the equation of the lines graphed in slope-intercept form.

38.



39.



#40-41. Graph the following equations using a table of values. Find 5 points. Graph on the answer key.

40. $y = 4x - 3$

x	y

41. $x - 2y = 6$

x	y

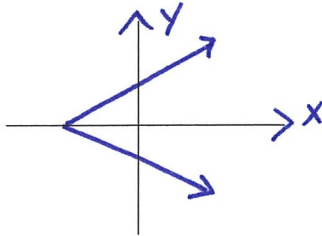
#42-43. Graph the following equations using slope intercept form. Graph on the answer sheet.

42. $y = -3x + 1$

43. $-8x + 6y = -24$

#44-45. Are these functions? Briefly explain why or why not.

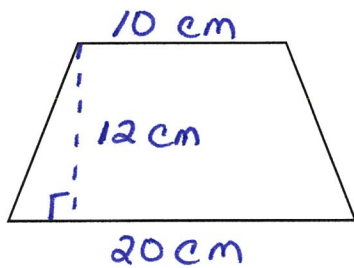
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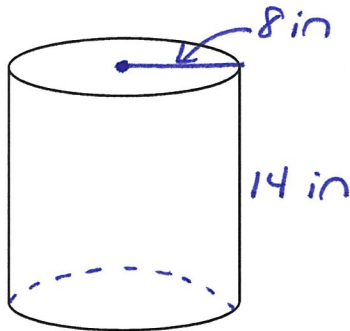
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x	-4	-2	0	2	4
y	8	4	0	-4	-8

#46-47. Find the **area** and **perimeter** of the regular trapezoid. Round to the nearest hundredth if necessary.



48-49. Find the **surface area** and **volume** of the cylinder. Round to the nearest hundredth if necessary.



50. A ladder is resting against the side of a building. The ladder is 12ft. long and it is 7ft from the building on the ground. How far up the building is the top of the ladder resting? Round to the nearest hundredth if necessary. (Hint: Draw a diagram to help.)

Name: _____

Pre-Algebra Review Answer Key

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. Equation: _____

Solution: _____

27. Equation: _____

Solution: _____

28. Equation: _____

Solution: _____

29. Equation: _____

Solution: _____

30. Solution: _____

←—————→

31. Solution: _____

←—————→

32. Inequality: _____

Solution: _____

33. Inequality: _____

Solution: _____

33. _____

34. _____

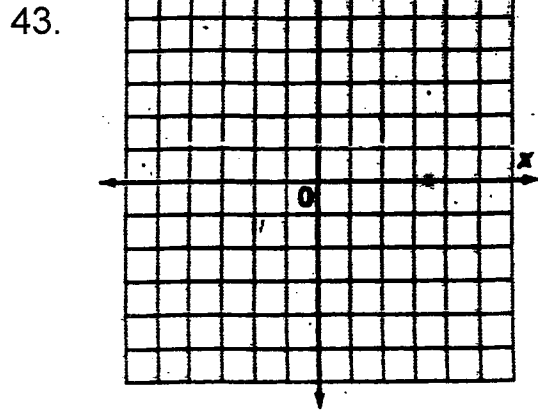
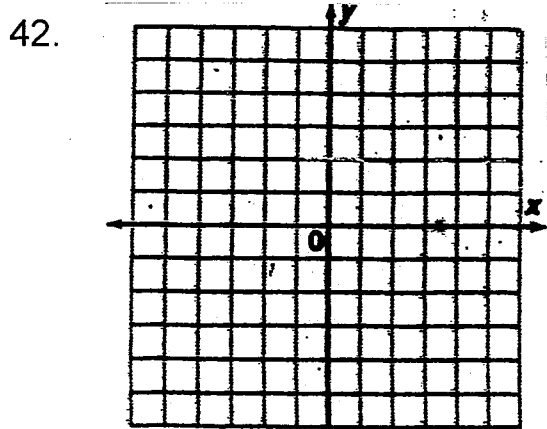
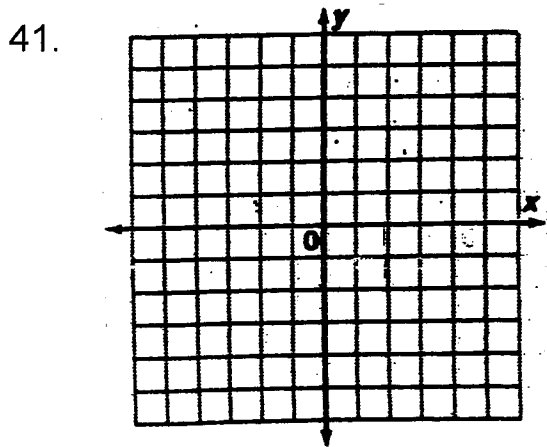
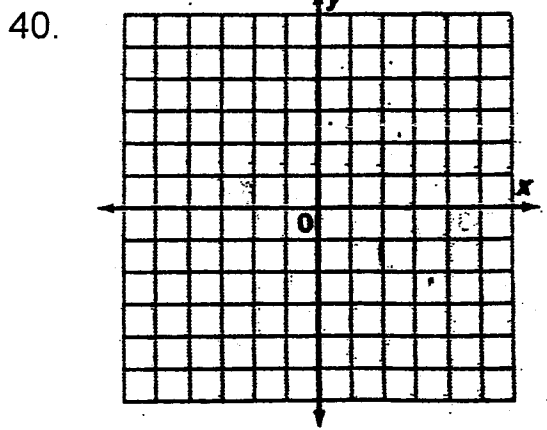
35. _____

36. _____

37. _____

38. _____

39. _____



44. _____

45. _____

46. Area: _____

47. Perimeter: _____

48. Volume: _____

49. Surface Area: _____

50. _____