

Name: _____

Pre-Algebra Summer Review Packet

This is a review of Pre-Algebra topics for all students entering Algebra in the fall.

Answers will be provided by your Algebra teacher the first week of school.

All work must be done without a calculator, unless the directions say otherwise.

The assignment may be collected or an assessment may be given during the first 2 weeks of school.

#1-10. Simplify.

1. $-10 - (-23)$

2. $15 - 6(-8)$

3. $(-11)(5) - 12$

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

5. $1\frac{2}{3} - \frac{7}{8}$

6. $4\frac{2}{5} + 5\frac{3}{4}$

7. $8\frac{3}{4} \div 2\frac{5}{8}$

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

9. $-48 \div 4 + 2^4 \cdot (-3)$

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

#11,13. Evaluate the following if $a = 4$, $b = -3$, and $c = 5$.

11. $a - b^2 + ca$

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

13. $2|bc - a|$

#14, 15. Write an algebraic expression for each verbal expression.

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

15. Four less than five times a number

#16-19. Simplify each expression completely.

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

17. $-4x - 6y + 10y - x$

18. $2(x - 5) + 4(3x - 2)$

19. $7y - 3(4x - 1) + 6y - 9x$

#20-24. Use a proportion or equation to solve. You must show the proportion or equation and work. You may use a calculator and round if necessary.

20. 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?

21. 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)

22. 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?

23. 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?

24. 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?

#25-30. Solve the following equations.

25. $-3x - 3 = 12$

26. $4(3x - 1) - 2x = 16$

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

28. $-2x + 8 + 4x = -10 + 2x + 18$

29. $2(3x - 4) + 11 = -x - 5 + 7x$

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

#31-34. Write and solve an equation for each.

31. 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?

32. 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?

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

34. 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?

#35, 36. Solve each inequality.

35. $4x + 7 > -1$

36. $-2(x - 7) \leq -4x - 10$

#37, 38. Graph each inequality.

37. $x \geq -5$

38. $x < 8$



#39, 40. Write and solve an inequality for each.

39. 10 more than 8 times a number is at most 50.

40. 4 times the difference between a number and 6 is at least 12.

#41, 42. List the factors of the following numbers.

41. 120

42. 250

#43-45. Simplify using the properties of exponents.

43. $(3x^4)(4x^5)$

44. $(2x^3y^2)^4$

45. $\frac{20y^8}{4y^3}$

#46, 47. Solve the following equations for y. (Get y alone.)

46. $-10x + 5y = 15$

47. $5x - 4y = 12$

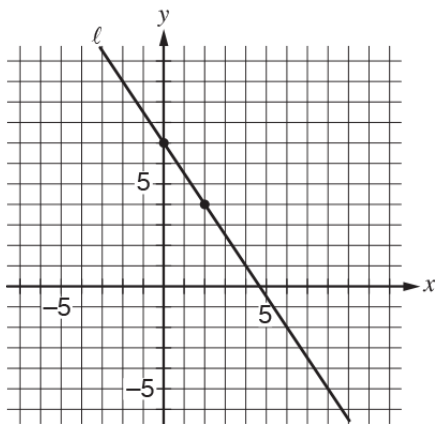
#48, 49. Find the slope of the line through the given points.

48. $(-2, -4)$ and $(1, -5)$

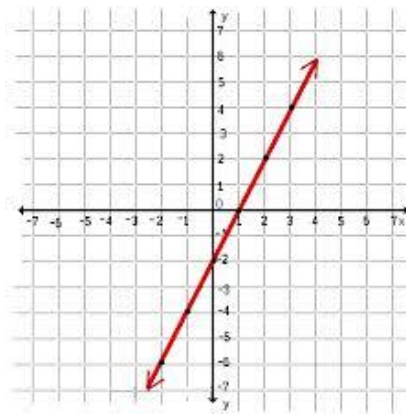
49. $(-3, 7)$ and $(-3, -11)$

#50, 51. Give the equation of the lines graphed in slope-intercept form.

50.

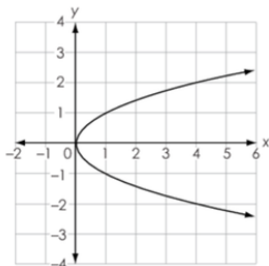


51.



#52, 53. Are these functions? Briefly explain why or why not.

52.

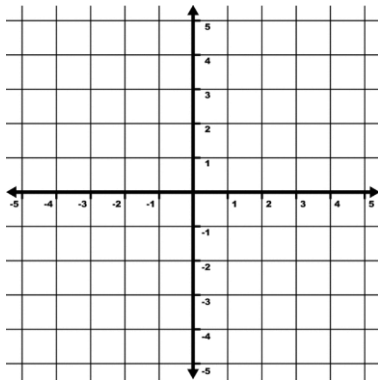


53.

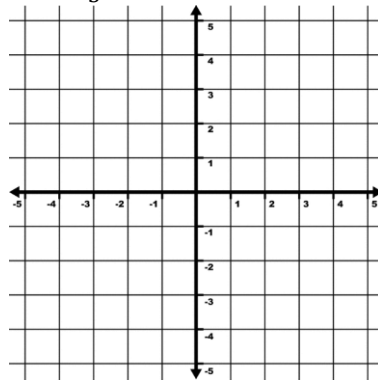
x	-4	-2	0	2	4
y	8	4	0	-4	-8

#54, 55. Graph the following equations using slope intercept form.

54. $y = -3x + 1$

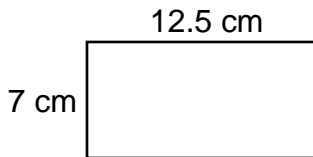


55. $y = \frac{4}{3}x - 4$

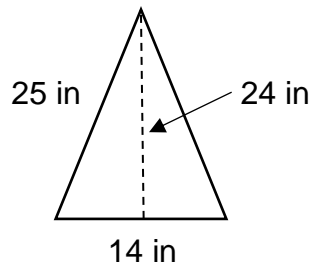


#56-58. Find the area and perimeter of each shape.

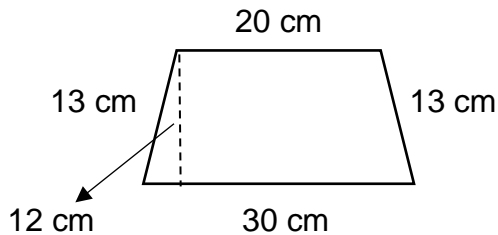
56. Rectangle



57. Isosceles Triangle

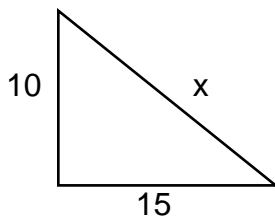


58. Trapezoid



#59, 60. Use the Pythagorean theorem to solve. You may use a calculator and round if necessary.

59.



60. A ladder is resting against the side of a building. The ladder is 12 ft. long and it is 7 ft. from the building on the ground. How far up the building is the top of the ladder Resting? (Use a diagram to help.)