

NAME _____ DATE _____

SUMMER MATH PACKET

– Mrs. Carlen’s Algebra/Geometry Class

-- Mrs. Fitz’s Honors Algebra Class

DUE: First Day of School

This packet is a review of all the material in Chapters 1-7 of the Algebra book. It should be things you already know how to do. Do your best.

Plan to turn this packet in when school starts. It will be graded on completion, not accuracy, but you should still try to get them right. **YOU MUST SHOW YOUR WORK TO RECEIVE POINTS.**

If you have any questions, you may email:

Mrs. Carlen at p.carlen@highlandcatholic.org

Mrs. Fitz at l.fitzgerald@highlandcatholic.org

Have a wonderful summer!

Mrs. Carlen and Mrs. Fitz

ALGEBRA REVIEW, Chapters 1-7

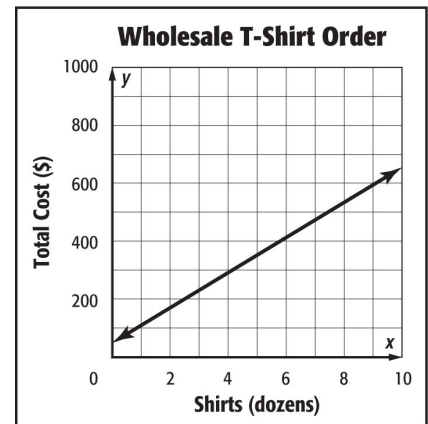
Write an algebraic expression for each verbal expression.

1. the sum of one-third of a number and 27
2. the product of a number squared and 4
3. Evaluate $3^2[(12 - 4) \div 2]$.
4. Evaluate $4w + (v - 5)t$ if $w = 2$, $v = 8$, and $t = 4$.

If $f(x) = 3x + 2$ and $g(x) = x^2 - x$, find each value.

5. $f(-2)$
6. $g(-6)$
7. $f(2) + 1$
8. $f(x + 1)$

Use the graph at right to answers the following questions.



9. State the independent variable and the dependent variable.
10. What is the end behavior of the function?
11. What is the total cost if 6 dozen shirts are ordered?

Simplify.

12. $3y - (6y + 2)$

13. $\frac{-12p + 24}{-6}$

Solve each equation. Check your solution.

14. $6(-3v + 1) = 5(-2v - 2)$

15. $7(-3y + 2) = 8(3y - 2)$

Solve each equation.

16. $|w - 2| = 5$

17. $|t + 2| = 4$

Solve each proportion. If necessary, round to the nearest hundredth.

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

19. $\frac{5}{f} = \frac{35}{21}$

20. $\frac{12}{7} = \frac{53}{m}$

21. $\frac{b}{7} = 9$

22. Find the final price.

television: \$375.00

discount: 25%

tax: 6%

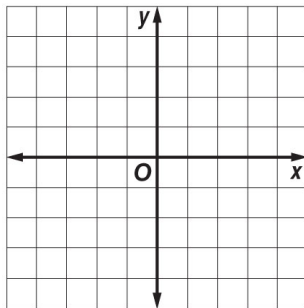
23. INVESTMENTS The price per share of a stock decreased from \$90 per share to \$36 per share. By what percent did the price of the stock decrease?

24. 20 is what percent of 16?

25. 30 is 40% of what number?

26. Five years ago there were approximately 35,000 people living in Lancaster. Now the population is 38,452. Find the rate of change (per year) in the population.

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



For Questions 28 and 29, find the slope of the line passing through each pair of points. If the slope is undefined, write *undefined*.

28. $(-8, 7)$ and $(5, -2)$

29. $(5, 9)$ and $(5, -3)$

For Questions 30-34, write an equation in slope-intercept form of the line satisfying the given conditions.

30. has y -intercept -8 and slope 3

31. has slope $\frac{5}{2}$ and passes through $(4, -1)$

32. passes through $(-3, 7)$ and $(2, 4)$

33. is horizontal and passes through $(-4, 6)$

34. Write the point-slope form of an equation of the line that has a slope of $-\frac{3}{5}$ and passes through $(2, 1)$.

For Questions 35-37, write an equation in slope-intercept form of the line satisfying the given conditions.

35. is perpendicular to $4y = 3x - 8$ and passes through $(-12, 7)$

36. is parallel to $3x - 5y = 7$ and passes through $(0, -6)$

37. What are the x - and y -intercepts of $2x - 3y = 12$.

Solve each inequality. Then graph the solution on a number line.

38. $9.8 \geq -2.8k$



39. $5t + 8 \leq 3t - 3$



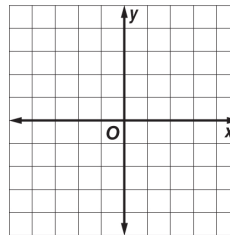
40. $3(-w - 6) < 2(2w + 8) + 1$



41. $|5x - 3| \geq 17$



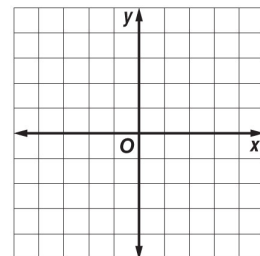
42. Graph $x + 3y > -12$ and shade the solution.



43. Graph the system of equations. Then determine whether it has *no* solution, *one* solution, or *infinitely many* solutions. If the system has one solution name it.

$x - 3y = -3$

$x + 3y = 9$



Name the best method (Substitution or Elimination) to solve each system of equations. Then solve the system.

44.

$$\begin{aligned}x - 5y &= -6 \\x + 2y &= 8\end{aligned}$$

45.

$$\begin{aligned}y + 4x &= 0 \\2y + x &= -7\end{aligned}$$

46.

$$\begin{aligned}5x + 3y &= 16 \\3x - 5y &= -4\end{aligned}$$

47.

$$\begin{aligned}3x - 5y &= 7 \\2x + 5y &= 13\end{aligned}$$

48. BOOKS A library contains 2000 books. There are 3 times as many non-fiction books as fiction books. Write and solve a system of equations to determine the number of nonfiction and fiction books.

49. COINS. Sara has a pile of dimes and quarters. There are 63 coins in the pile. Their value is \$10.65. How many dimes and how many quarters does she have?

50. Solve $(3.4 \times 10^5)(7.5 \times 10^{-9})$. Write your answer in both standard and scientific notation.

51. Evaluate $\frac{6.08 \times 10^7}{3.8 \times 10^{-2}}$. Write your answer in both standard and scientific notation.

Simplify. Assume the denominator is not equal to zero.

52. $(n^5)(n^2)(r^3)(r^4)$.

53. $(3w^2r)^2(-2w^5r^2)^3$.

54. $(2ab^2f^2)(4a^3b^2f^2)$

55. $(-15xy^4)\left(-\frac{1}{3}xy^3\right)$

56. $\frac{m^6n^3}{m^2n^6}$

57. $\frac{(z^2w^{-1})^3}{(z^3w^2)^2}$

58. $\frac{2x^3y^5}{5(x^4y^2)^3}$

59. $\frac{-10m^{-1}y^0r}{-14m^{-7}y^{-3}r^{-4}}$