



CHESAPEAKE BAY GOVERNOR'S SCHOOL
SOPHOMORE MATH WORKSHEET
(To be completed and brought to New Student Orientation on 8/19/13)

NAME _____ DATE _____

Show detailed work in the space provided. Answer all questions.

(A) REAL NUMBERS AND NUMBER OF OPERATIONS

Graph the numbers on a number line. Then write the numbers in increasing order.

1. $-2, 0.2, -\pi, -\sqrt{6}, \frac{6}{5}$	2. $\frac{3}{4}, \sqrt{3}, -1.75, -3, -\frac{4}{3}$
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Select and perform an operation to answer the question.

3. What is the sum of 17 and 79?	4. What is the product of -6 and -4?
5. What is the difference of 19 and -10?	6. What is the quotient of 30 and -6?

Identify the property shown.

7. $4(5+1) = 4 \cdot 5 + 4 \cdot 1$	8. $8 + (-8) = 0$
9. $(8+6) + 4 = 8 + (6+4)$	10. $9 \times -2 = -2 \times 9$

(B) ALGEBRAIC EXPRESSIONS AND MODELS

Evaluate the expression.

11. $-3 - 6 \div 2 - 12$	12. $-5 \div 1 + 2(7 - 10)^2$
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13. $7x - 3x - 8x^3$ when $x = -1$

14. $3ab^2 + 5a^2b - 1$ when $a = 2$ and $b = -2$

Simplify the expression.

15. $7y - 2x + 5x - 3y + 2x$

16. $4(3 - x) + 5(x - 6)$

17. $6x^2 - 3x + 5x^2 + 2x$

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

(C) SOLVING LINEAR EQUATIONS

Solve the equations. Check your solution.

19. $-5x + 3 = 18$

20. $\frac{2}{3}n - 5 = 1$

21. $\frac{1}{2}y = -\frac{3}{4}y - 40$

22. $2 - 3a = 4 + a$

23. $8(z - 6) = -16$

24. $-4x - 4 = 3(2 - x)$

(D) REWRITING EQUATIONS AND FORMULAS

Solve the equation for y.

25. $5x - y = 10$	26. $x + 4y = -8$
27. $0.1x + 0.5y = 3.5$	28. $2x = 3y + 9$
29. $5x - 6y + 12 = 0$	30. $x - 2xy = 1$

Solve the formula for the indicated variable.

31. Solve for l : $P = 2l + 2w$

32. Solve for C : $F = \frac{9}{5}C + 32$

(E) PROBLEM SOLVING USING ALGEBRAIC MODELS

33. How long will it take to drive 325 miles at 55 miles per hour? (Write your answer in hours and minutes)

34. While on vacation, you take taxi from the airport to your hotel for \$21.85. The taxi costs \$2.95 plus \$1.35 per mile. How far is it from the airport to the hotel?

(F) SOLVING LINEAR INEQUALITIES

Solve the inequality. Then graph your solution.

35. $2x - 10 > 6$

36. $12 - 5x \geq -13$

37. $-3x + 4 \geq 2x + 19$

38. $0 < x - 7 \leq 5$

39. $-3 \leq 2y + 1 \leq 5$

40. $3a + 1 < -2$ or $3a + 1 > 7$

(G) SOLVING ABSOLUTE VALUE EQUATIONS AND INEQUALITIES

Solve the equation or inequality.

41. $ x + 1 = 5$	42. $ 2x - 1 = 15$
43. $ 10 - 6x = 26$	44. $ x + 8 > 0$
45. $ 2x - 5 < 9$	46. $ 3x + 4 \geq 2$

(H) USING PROPERTIES OF EXPONENTS

Simplify the expression.

47. $\left(\frac{2}{3}\right)^2 \cdot (6xy^{-1})^3$

48. $x^4(x^{-5}x^3)^2$

49. $\frac{-63xy^9}{18x^{-2}y^3}$

50. $\frac{5x^2}{y^{-2}} \cdot \frac{1}{25x^2y}$