

ALGEBRA 2 – ENHANCED SUMMER REVIEW PACKET

The following is a set of problems that we as a math department feels you should remember how to do from previous classes. You are to work on these problems in early August. This will give you an advantage when beginning Algebra 2.

If you do not know how to do a problem, try to look it up in a math book or old notebooks.

Make sure that you **show all work** where possible and **do not use a calculator**.

THIS IS DUE THE FIRST DAY OF SCHOOL!!!

I Graph the numbers on a number line and then write the numbers in increasing order.

Example: $\frac{7}{2}, -3, -5$

Solution: $-5 < -3 < \frac{7}{2}$



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

2. $\frac{-3}{2}, -\frac{11}{2}, \frac{5}{4}$

II Write an expression and evaluate.

3. What is the sum of -20 and 8?

4. What is the difference of 12 and -25?

5. What is the product of 5 and -7?

6. What is the quotient of 36 and -12?

III Write the expression using exponents.

Example: 3 to the fifth power Solution: 3^5

7. 5 to the tenth power

8. -2 to the third power

IV Simplify the expression.

9. 4^4

10. $(-3)^5$

11. $(-4)^2$

V Evaluate the following using order of operation.

12. $13 + 20 - 9$

13. $6 \cdot 2 + 35 \div 5$

14. $-6 + 3(-3 + 7)^2$

15. $24 - 8 \cdot 12 \div 4$

VI Evaluate the expression for the given value or x and y.

16. $x - 12$ when $x = 7$

17. $25x(x - 4)$ when $x = -1$

18. $(3x)^2 + 4y$ when $x = 2$ and $y = -8$

VII Simplify the expression. (Combine like terms)

19. $-19x^2 + 4x + 15 - 7x^2 - 10x - 8$

20. $5(2x - 7y) - 3(6x + 4y)$

VIII Solve the equation.

21. $5x + 2 = 12$

22. $4(-3 + 1) = -10(x - 4)$

23. $\frac{2}{5}x + 6 = 18$

IX Solve the inequality and graph on the number line.

24. $3x - 12 > 9$

25. $-7(x + 1) \leq 28$

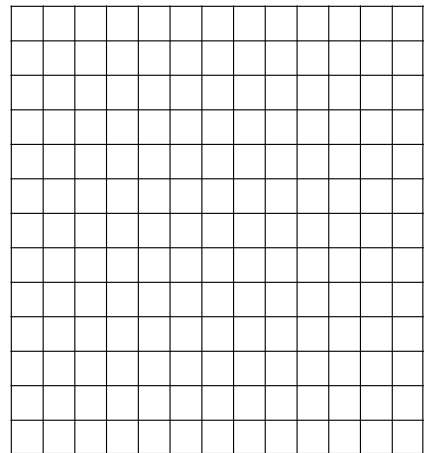
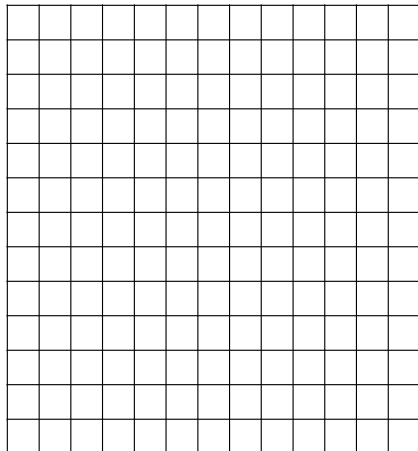
26. $-10 < 2x + 6 \leq 18$

27. $5x - 15 \leq -12$ or $3x + 8 > 20$

X Graph the equation.

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

29. $2x - 3y = 6$



XI Find the slope of the line through the given points. $m = \frac{y_2 - y_1}{x_2 - x_1}$

30. (5, 12) & (8, 20)

31. (9, 5) & (-4, 5)

32. (-4, 10) & (-4, 25)