



## ALGEBRA 2 SUMMER REVIEW PACKET

The completion of this review packet is a requirement for all students enrolled in Algebra 2 at Triton, Highland, and Timber Creek High Schools. The topics covered in this review were taught in Algebra I and are necessary for success in Algebra II.

Please do not wait until the end of August to start this work; pace yourself throughout the summer using it as a review. Work neatly. Your teacher must be able to follow your work. Any side work is to be done neatly. If extra paper is used, the problems are to be numbered.

This packet will count towards your homework grade and you **must** have it **completed** to receive full credit. If you don't understand something, do your best to complete the problem and then make a note in the margin as a reminder to ask the teacher for a better explanation when you are in class.

Bring this packet with you on the first day of class because it will be reviewed the first week of school and all problems will be explained. Then a test will be given after all problems have been reviewed.

Have a safe and enjoyable summer! Your teachers look forward to meeting you in September!

Name the subsets of the real numbers to which each belongs. (natural, whole, integer, rational, irrational).

1. 13

2. -2

3.  $-\sqrt{11}$

4. 35.444...

True or false?

5.  $257.023 < 257.0023$

6.  $-58 > -23$

7. 5.12121212... is rational

8. -9 is an integer

Simplify. Show all steps.

9.  $100 - 6^2 - 6$

10.  $4[3 - 2(-5(2))]$

11.  $\sqrt{20 + 4^2}$

12.  $|15 - 23| - |34 - 28|$

13.  $(-2)(-3)(0)(-2)$

14.  $\frac{|8 - 2|}{3} - \frac{|6 - 9|}{3} - \frac{|7 + 3|}{2}$

15.  $\frac{9 \cdot 6 + 18 \div 6 - 3 \cdot 3 - 15 \div 3}{3}$

True or false

16. If  $a^2 > b^2$  then  $a > b$

17. If  $a = b$ , then  $a^2 = b^2$

18.  $|a + b| = |a| + |b|$

19.  $|a| = a$

Evaluate using the value given for each variable.

20.  $4a + 7 + 3a - 2 + 2a$ ;  $a = -5$

21.  $\frac{3(2x + 1) - 2(x - 3)}{x + 6}$ ;  $x = -3$

22.  $5x^3 - 6x^2 + 3x^4 - 2x$ ;  $x = -5$

23.  $\frac{3(x+y) - 2(x-y)}{5x+y}$ ;  $x = 3, y = 4$

Translate each phrase into symbols.

24. Three times a number increased by twelve.

25. The difference between a twelve and a number.

26. Eight times a number is equal to three times the same number decreased by seven.

27. One fourth of a number increased by two is the same as forty.

28. One fourth of the sum of a number and two is the same as forty.

29. Seven less than a number is fifty.

Simplify

30.  $\frac{-1(-32x+40y)}{4}$

31.  $\frac{1(-35a + 15)}{5}$

32.  $3(x + 4y) + (-4)(8x - y)$

33.  $-2(3c + d) - 3(5d - c)$

Solve and check each equation.

$$34. 5y - (2-3y) = 54$$

$$35. 3x - 4 + 8x + 3 = 32$$

$$36. 6(x - 2) = 2(9 - 2x)$$

$$37. 7x - 6(11 - 2x) = 10$$

$$38. 8x - 3(6 + x) = 5x + 4$$

Clear fractions and solve.

$$39. \frac{x}{3} + \frac{x}{6} = \frac{7}{2}$$

$$40. 5x + \frac{1}{3} = 2x - \frac{3}{2}$$