Algebra II Chapter 1 Test Review

Please show all work and answers on separate paper. The test will consist of 2 parts, calculator and non calculator. . Test reviews are due on test day - NO LATE REVIEWS ACCEPTED.

Part I (#1-44) - NON-CALCULATOR!

To which sets of numbers does the number belong?

2. -17 3. $-\frac{2}{15}$ 4. $-1.\overline{18}$ 1. $\sqrt{31}$ 5. *π*

Graph the number on a number line.

7. $-\frac{2}{5}$ 6. $\frac{10}{7}$

Insert <, >, or = to make the sentence true.

8. $-\frac{5}{8}$ \square $-\frac{3}{4}$ 9. $\frac{1}{5}$ \square $\frac{3}{7}$ 10. |-19| 🔲 -|16| 11. |11 - 16| -14 + 7|

Find the opposite and the reciprocal of the number.

12. 3 13. $4 - \pi$

Name the property of real numbers illustrated by the equation.

- 14. 5(x + 4) = 5x + 2015. $3 \cdot \left(\sqrt{6} \cdot 12\right) = \left(3 \cdot \sqrt{6}\right) \cdot 12$
- 16. $x \cdot 6 = 6 \cdot x$
- 17. -8 + 8 = 0
- 18. -2.2 + 0 = -2.2

Evaluate the expression for the given value of the variable(s).

20. $|-b + 5| + |4 - b^2| - 2b^3; b = -3$ 19. 5a + 5b; a = -6, b = -521. $2x^2 - 4x - 1$; x = -422. $-2x^3 + 3x^2 - 3x + 5$; x = 2 23. $-2x^3 - x^2 - 5x + 2$; x = -3

Simplify by combining like terms.

24.
$$5c - 7d - 8c + 6d$$
 25. $-2(-4y - 4) - 3y$

- 26. 7(x 0.4) 0.5(4x 3) = 427. |3x + 5| = 1
- 28. 4|x+2| 3 = 9

Solve the equation or formula for the indicated variable.

30. $2B = \frac{5M}{W}$, for M 29. $S = 5r^3 t$, for t

Solve for x. State any restrictions on the variables.

31. ax + bx - 2 = -1032. a(bx + 2) = cx - 12

Solve the inequality. Graph the solution set.

34. 4(4b-1) < -16 + 16b 35. $45 + 15b \ge 5(3b+5)$ 33. $-2k + 3 \ge 11$

Solve the compound inequality. Graph the solution set.

- 37. 7x 8 < -36 or 6x + 7 > 1936. $9x + 11 \ge -25$ and $8x - 10 \le 38$
- 38. $-13 \le 5x 3 < 12$

Solve the inequality. Graph the solution.

- 39. $|4x + 10| \ge 10$ 40. |2x + 10| < 2641. | 6x + 6 | < 12
- 42. Sophia and Clarisse tossed a coin 60 times and got heads 34 times. What is the experimental probability of tossing heads using their results?
- 43. A spinner is numbered from 1 through 10 with each number equally likely to occur. What is the probability of obtaining a number less than 2 or greater than 7 in a single spin?
- 44. A bag contains 5 red marbles, 7 white marbles, and 5 blue marbles. Find P(red or blue).

Part II (#45 – 49) – Calculator Allowed

Solve the equation. Check for extraneous solutions.

- 45. 3|5 2x| = 3x + 4
- 46. |x + 5| = 5 + 3x
- 47. A rectangle is 5 times as long as it is wide. The perimeter is 40 cm. Find the dimensions of the rectangle. Round to the nearest tenth if necessary.
- 48. The sides of a triangle are in the ratio 2:3:4. What is the length of each side if the perimeter of the triangle is 81 cm?

Algebra II Chapter 1 Test Review Solutions

1. irrational numbers, real numbers
2. integers, rational numbers, real numbers
3. rational numbers, real numbers
4. rational numbers, real numbers
5. irrational numbers, real numbers
6.
$$\overbrace{-5 - 4 - 3 - 2 - 1 \ 0 \ 1 \ 2 \ 3 \ 4 \ 5}}$$

7. $\overbrace{-5 - 4 - 3 - 2 - 1 \ 0 \ 1 \ 2 \ 3 \ 4 \ 5}}$
8. $>$
9. $<$
10. $>$
11. $<$
12. $-3, \frac{1}{3}$
13. $\pi - 4, \frac{1}{4 - \pi}$
14. Distributive Property
15. Associative Property of Multiplication
16. Commutative Property of Multiplication
17. Inverse Property of Addition
18. Identity Property of Addition
19. -55
20. 67
21. 47
22. -5
23. 62
24. $-3c - d$
25. $5y + 8$
26. $\frac{53}{50}$ or 1.06
27. $x = -1\frac{1}{3}$ or $x = -2$
28. $x = 1$ or $x = -5$
29. $t = \frac{S}{5r^3}$
30. $M = \frac{2BW}{5}$
31. $x = \frac{-8}{a + b}; a \neq -b$
32. $x = \frac{-12 - 2a}{ab - c}; ab \neq c$
33. $k \leq -4$



-8 -6 -4 -2 0 2 4 6 8

40. -18 < x < 8< + °- + − + − -20 -15 -10 -5 0 5 10 15 20

41.
$$-3 < x < 1$$

 $(-20 - 15 - 10 - 5 \ 0 \ 5 \ 10 \ 15 \ 20$
42. $\frac{17}{30}$
43. $\frac{2}{5}$
44. $\frac{10}{17}$
45. $x = \frac{11}{9}$ or $x = \frac{19}{3}$
46. $x = 0$
47. 3.3 cm by 16.7 cm

48. 18 cm, 27 cm, and 36 cm