

Summer Algebra Packet

This packet should help prepare you for Algebra I at Trumbull High School. Please complete these problems before the first day of school.

For examples #1 – 5, simplify each expression without using a calculator. Leave your answer as an improper fraction in simplified form.

1. $\frac{5}{8} + \frac{9}{4}$

2. $\frac{2}{3} - 1\frac{5}{7}$

3. $\frac{5}{9} \square \frac{2}{10}$

4. $\frac{12}{25} \div \frac{6}{15}$

5. $\frac{6}{\frac{4}{5}}$

6. What is 63% of 147? Round to the nearest tenth.
7. 43 is what percent of 37? Round to the nearest tenth.
8. 59 is 125% of what number? Round to the nearest tenth.
9. Ashley bought \$74 jeans at 30% off. How much did she pay?
10. In 1995, the population of THS was 1956 students. In 2009, the population was 2136. What is the percent increase of the population? Round to the nearest tenth.
11. Jennifer bought a \$88 sweater at a discount of 25%. She then had a coupon for 15% off her entire purchase. How much did she pay for the sweater?
12. The average SAT score for math in 1986 was 490. Since then, the average score has increased by 8.2%. What is the average score now? Round to the nearest whole number.
13. Write $\frac{7}{16}$ as a decimal and as a percent.

14. Write .52 as a simplified fraction and as a percent.
15. If you are driving at a constant speed of 55 miles per hour, how long will it take you to travel 193 miles? Round to the nearest tenth.
16. If you deposit \$230 in a savings account that pays an annual interest rate of 1.7%, how much interest would you earn in three years? (Use $I = prt$)
17. What is the area of a right triangle with legs of length 73.6 and 49.1? ($A = \frac{1}{2}bh$) Round to the nearest tenth.

18. Evaluate the expression $\frac{2}{5}x$ when $x = \frac{3}{5}$.

19. Evaluate the expression $\frac{4}{7} - p$ when $p = \frac{5}{9}$.

20. Evaluate the expression $(x + y)^2$ when $x = 7$, $y = 5$

21. Evaluate the expression $(2a - 3b)^3$ when $a = -3$, $b = 2$

22. Simplify: $\frac{2}{3}(5 - 2)^2 + 3$

23. Simplify: $2.5 \square 0.5^2 - 1.63(.02 - 4.7)^3$

24. Check whether the given number is a solution of the equation:

$$\frac{2}{3}x - \frac{5}{4}(x - 8) = 9 - x \text{ when } x = 12$$

25. Check whether the given number is a solution of the inequality:

$$a(3a + 2) > \frac{2}{3}a \text{ when } a = \frac{1}{5}$$

26. Rewrite as an inequality:

The perimeter, P , of a square is greater than four times the difference of a number, s , and 2.

27. A recycling center pays \$.05 per aluminum can. You are paid \$4.00 for recycling cans.

a. Write a equation that represents this situation.

b. Solve the equation.

28. Evaluate the expression $-\left|-\frac{2}{9}-\frac{2}{3}\right|+\frac{4}{5}$

29. Write the numbers in increasing order: $2, -\frac{5}{4}, -1.4, \frac{11}{7}, -1, 1.5$

30. Simplify: $-3\frac{3}{4}-\left(-2\frac{1}{2}\right)+4$

31. Simplify: $\frac{3}{8}\square\frac{5}{9}\div-\frac{5}{6}+-\left(\frac{7}{10}\right)$

32. Simplify: $(-8)(d)(d)(-d)$

33. Simplify: $-(-g)^3$

34. Evaluate: $-\frac{3}{5}\left(\left|c+\frac{7}{6}\right|-2\right)$ when $c=-1\frac{1}{3}$

35. Simplify: $-3(4w+9y)+6y$

36. $\frac{3}{10}k(5h+20g)$

37. Simplify: $-28k\div-1\frac{3}{5}$

38. Simplify: $\frac{-36a}{40b}\div\frac{9a}{-10}$

39. What is the probability that you will roll a number greater than 2 on one roll of a six-sided die?

40. If you buy five raffle tickets, what are the odds that you will win if there are 450 tickets sold? Leave in reduced fraction form

41. A group of 220 students were asked to name the sport they most like to attend. The results are shown in the table below.

Sport	Basketball	Soccer	Football	Baseball	Volleyball	Wrestling	Hockey
Number	40	20	50	55	10	10	35

- What is the probability that a randomly chosen student said either basketball or soccer?
- What is the probability that a randomly chosen student did not say baseball?
- What are the odds that a randomly chosen student said football?

For examples # 42 – 50 solve each equation for the given variable:

42. $x - 5 = 9$

43. $v - (-4) = -6$

44. $10 - r = 15$

45. $-23 = 98 + p$

46. $-52(23.4 - u) = 289.4$ Round to nearest hundredth.

47. $\frac{5}{13}(n + 12) = 7$

48. $17 = 3(6 - b)$

49. $65 - \frac{3}{4}m = 54\frac{1}{2}$

50. $4a - 11 = 9 + 3a$