



## ALGEBRA 1 PREP

This is a self-test to determine if the Algebra 1 Prep class is suitable for your student.

Students should be able to answer **22 of the Fundamentals problems and 6 of the Problem-Solving problems correctly within 1 hour. No calculator is allowed.** If a student struggles with these problems, then he/she might want to consider our Ellipsis Prealgebra classes that are offered in the fall semester or work on Pre-Algebra skills more comprehensively through FlexMath program.

### Fundamental problems:

1. Compute:  $51 \times 309$
2. Compute:  $11169 \div 17$
3. Evaluate:  $\frac{2}{5} + \frac{3}{8}$
4. Evaluate:  $3\frac{1}{6} - \frac{1}{4}$
5. Evaluate:  $\frac{15}{4} \times \frac{16}{25}$
6. Evaluate:  $10 \div \frac{2}{3}$
7. Evaluate:  $2\frac{1}{2} \div \frac{5}{2}$
8. Evaluate:  $1\frac{3}{8} + \frac{1}{8} \times 6$
  
9. Convert  $13/4$  to a mixed number.
10. Convert the following fraction to decimals:  $\frac{7}{20}$
11. Convert the following fraction to decimals:  $\frac{13}{4}$
12. Convert the following fraction to decimals:  $\frac{1}{8}$
13. Convert the following to fraction in simplest form: 0.08
14. Convert the following to fraction in simplest form: 0.625
15. Convert the following to fraction in simplest form: 3.64
16. Select all of the following which are true about 37%?
  - a. It's like having \$37.00.
  - b. It's the same as 37 hundredths.
  - c. It equals 3.7.
  - d. It's like having 37 parts out of 100.
  - e. It's the same as  $37/100$ .
  - f. If 100 cookies were divided into 37 groups, that would be 37%.
17. Place Value. Which place value is the digit 9 in the following number? 503.092
18. Which place value is 10 times smaller than the hundredths place?
19. Compute:  $44.2 \times 1.2$
20. Compute:  $0.005 \div \underline{\hspace{1cm}} = 25$

21. Compute:  $105 \div 0.5$
22. Compute:  $0.008 \times \underline{\hspace{2cm}} = 1$
23. Evaluate:  $4^3 - (41 + 5) \times 0.1$
24. What is the GCF and LCM for 9 and 15.
25. List the following numbers in order from least to greatest:

$-20.5, -30, 1.5, 0.25, \frac{3}{5}, -\frac{1}{6}$

### Problem Solving

1. The ratio of teachers to students in a particular school is 1 to 11. The ratio of female students to the total number of students is 4 to 9. If there are 396 female students, then how many teachers are there?
2. Ronald's age is double Ryan's age. The product of their ages in years is 72. How old is Ryan?
3. A local store is selling a 6-pack of 100watt light bulbs for \$9.50. An online retailer is currently selling an 8-pack of 100watt bulbs for \$12 (shipping included). Which deal is the better buy, and why?
4. Jeffrey typed 110 words in  $2\frac{3}{4}$  minutes. At this rate, how many words can he type in  $4\frac{1}{4}$  minutes?
5. A rectangular tank measures 12 inches long, 8 inches wide, and 40 inches high. What is the volume of the water in cubic inches, when it is  $\frac{1}{4}$  filled?
6. Loren made 20 ounces of a snack mix that was  $\frac{2}{5}$  peanuts, 25% raisins, and 4 ounces of chocolate chips. The rest was granola. How many ounces of granola were in Loren's snack mix?
7. Three-fourth liter of milk can fill 4 similar glasses. How many such glasses can 3 liters of milk fill?
8. Lynn participated in a 100-m race. She completed the race in 12 seconds. What was her average speed per minute?
9. Mr. Spark drove from City A to City B at an average speed of 108 km/h. He took 4 hours to complete the journey and this includes a 20-minute break. What is the distance between City A and City B?
10. Veer donated \$5 for every \$4 donated by Joshua. If they donated \$1800 altogether, how much money did Joshua donate?