

Practice Problems for Exam 1

Read the Directions: Doing the following problems will help you practice for the first exam on Tuesday. Don't assume the problems will be exactly like these. You should also study your homework exercises. This set of practice problems is due at the exam. Also, you need to have completed also the homework exercises in order to take the exam. If there are homework sets you have not completed, you will need to complete them to take the exam.

1. Simplify the following expressions:

$$9^0 \quad 0^9 \quad 10^9 \quad (3^4)^2 \quad 5^{33}5^{12} \quad 6^2 + 2^6 \quad 6^2 \cdot 2^6 \quad 2^3 \cdot 2^6$$

2. Write the number you calculated for 10^9 verbally.

3. Suppose Americans use five hundred eighty million, four hundred ninety-two thousand, two hundred pounds of toothpaste in one year. Write the number.

4. Put the following whole numbers in order from smallest to largest:

$$108,901 \quad 180,901 \quad 108,091 \quad 108,910 \quad 109,801 \quad 180,901$$

5. What are the place values of the digits 0 and 9 in the number 140,693?

6. Explain the difference between $0 \div 1$ $0 \div 0$ $1 \div 0$

7. Determine whether each of the following numbers are even or odd:

$$666 \quad 333 \quad 1378 \quad 121$$

8. Determine whether each of the following numbers is prime or composite:

$$145 \quad 671 \quad 2 \quad 61$$

9. Round 1252757 to the thousands place.

10. Round 899 to the tens place.

11. For the following numbers: 350
Find all the factors

81

36

75

Find all factorizations

Find prime factorizations

12. Find the prime factorization for 1000000000

13. Determine whether 30 is prime, composite, or neither.

14. Which of the following numbers are perfect squares:

40

400

10

10,000

1000

121

15. Explain the difference between

$$\frac{0}{5}$$

$$\frac{0}{0}$$

$$\frac{5}{0}$$

16. Convert to a mixed number:

$$\frac{63}{7}$$

$$\frac{63}{8}$$

17. Convert to an improper fraction:

$$2\frac{5}{7}$$

$$13\frac{1}{13}$$

$$5\frac{5}{5}$$

18. Compare the following fractions

$$\frac{4}{7} \square \frac{5}{8}$$

$$\frac{8}{11} \square \frac{3}{4}$$

$$\frac{51}{68} \square \frac{3}{4}$$

19. Perform the indicated operations:

$$\frac{11}{13} + \frac{25}{39}$$

$$\frac{11}{14} + \frac{5}{14}$$

$$\frac{11}{13} - \frac{25}{39}$$

$$2 - \frac{25}{39}$$

$$10\frac{4}{5} - 4\frac{9}{10}$$

20. Solve for x:

$$x + 6\frac{7}{9} = 13\frac{3}{7}$$

$$x - 12\frac{5}{9} = 12\frac{5}{9}$$

21. You want to install a fence around the playground you are building. The playground is rectangular with length $12\frac{5}{12}$ feet and width $8\frac{1}{4}$ feet. How much fencing would you use to enclose the playground?

22. 4 out of 5 is a ratio. Express it as a fraction, a decimal and as a percent.

23. Write each of the following as a percentage:

.5

2

.04

.745

24. Write each of the following percentages as a decimal

2%

.37%

100%

25. 60% of all U.S. citizens are uncomfortable with fractions. Assuming the same percentage holds at Cabrillo and the college has 17,000 students, how many Cabrillo students are uncomfortable with fractions.

26. In a recent survey, 70% of the 1400 female students and 30% of the 1000 male students on campus indicated that shopping was their favorite leisure activity. How many students placed shopping at the top of their list? What percent of the entire student body does this represent?

27. In November 2001, Alcatel, one of Europe's leading makers of telecommunications equipment announced that it was slashing its worldwide workforce from 110,000 to 77,000. What percent of its workforce was being laid off?

28. There are 1450 females among the 2250 students at the local community college. Express this ratio in each of the following forms:

- a. fraction form
- b. reduced fraction form
- c. decimal form
- d. percent form