

Re-Entry Mathematics Diagnostic Test

Work each of the following problems. These problems represent the type and difficulty of problems which are on the Re-Entry Mathematics placement test. Give yourself one hour to work the whole test. When you are done check your results with the correct answers on the next page.

1. $1\frac{11}{12} + 2\frac{7}{15} = ?$

2. $3\frac{1}{4} - 1\frac{3}{5} = ?$

3. $3\frac{1}{3} \div 5 = ?$

4. $\left(4\frac{2}{3}\right)\left(5\frac{1}{7}\right) = ?$

5. Arrange the following fractions in order from smallest to largest:

$$\frac{5}{9}, \quad \frac{1}{2}, \quad \frac{3}{5}, \quad \frac{7}{15}$$

6. Change the decimal .0025 into a fraction.

7. If .04 is multiplied by .6 the answer will be:

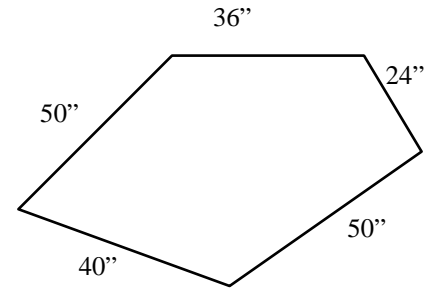
- a. smaller than both .04 and .6
- b. smaller than .6 but larger than .04
- c. larger than both .04 and .6

8. Change $\frac{3}{200}$ to a decimal.

9. Find the value of X which will make the proportion true: $\frac{120}{56} = \frac{105}{X}$

10. If a family has spent \$4,369 on housing in two months, how many months will it take for the family to spend the amount of \$15,000? (Round your answer to the nearest whole month)
11. Change .025 to a percent.
12. Change $3\frac{1}{3}\%$ into a fraction.
13. Change $\frac{5}{8}$ into a percent.
14. What is $\frac{3}{4}\%$ of 220 ?
15. $66\frac{2}{3}\%$ of what number is 60?
16. 15 is what percent of 10?
17. A family has kept track of the family budget for a year and determined that they spent \$24,500 in the past year on their housing. The family income for the year was \$78,400. What percent of the family income went to housing? (Round answer to the nearest whole percent.)
18. Judy's salary is earned as a 15% commission of her sales. How much does she have to sell to make a salary of \$6,300?
19. If \$400 is invested at 8% simple interest (not compounded) what amount will be returned after two years?
20. A table top measures $13\frac{1}{2}$ feet long and $2\frac{1}{3}$ feet wide. What is the area of the table top?
21. What is the perimeter of the table in problem 20?
22. Find the area of a triangle which has a base of 24 inches and a height of 20 inches.
23. Find the area of a trapezoid with a height of 10" and bases of 12" and 20".

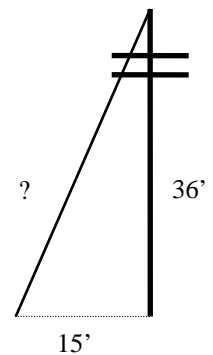
24. Find the perimeter of the figure at the right.



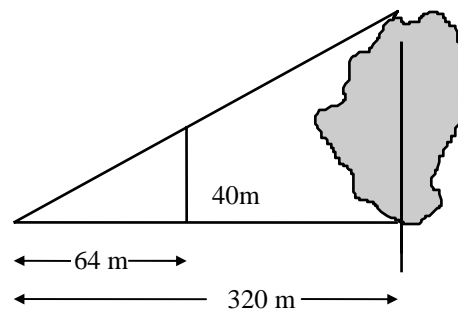
25. A circular patio has a radius of 10 feet. What is the area of the patio? (Round to the nearest tenth of a square foot.)

26. What length of fencing should be purchased to enclose the entire circular patio with the radius of 10 feet? (Round to the nearest tenth of a foot.)

27. In the diagram at the right, a guy wire is necessary to support the telephone pole. If the height of the pole is 36 feet and the guy wire is to be placed 15 feet from the base of the pole how long a wire is needed?



28. In the diagram at the right, the smaller triangle is similar to the larger one. Find the distance across the lake.



Find the value of x in problems 29 through 31:

29. $\frac{3}{4}x = 12$

30. $.004x = .64$

31. $x - \frac{5}{8} = -2\frac{1}{2}$

32. $5 - 2(3 - 7) = ?$

33. $12 - \{3 - 5[7 - 4(2)] - 6\} = ?$

34. $\frac{3 + (2 - 8)}{5 - 2(12 - 5)} = ?$

35. The diagram below shows the distribution of students at a university by individual college. Determine the number of students enrolled in the Liberal Arts College.

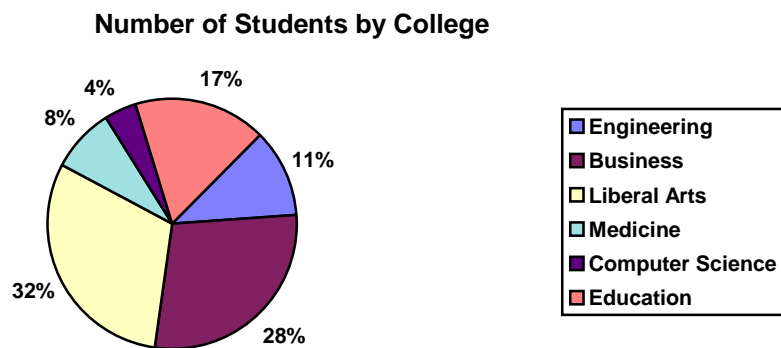


Figure 1 : Pie Chart displaying the breakdown of students by College. Currently there are 3,500 students enrolled in the school.

RE-ENTRY MATHEMATICS ANSWERS

1. $4\frac{23}{60}$
2. $1\frac{13}{20}$
3. $\frac{2}{3}$
4. 24
5. $\frac{7}{15} < \frac{1}{2} < \frac{5}{9} < \frac{3}{5}$
6. $\frac{1}{400}$
7. a. smaller than both .04 and .6
8. .015
9. 49
10. 7 months
11. 2.5%
12. $\frac{1}{30}$
13. 62.5%
14. 1.65 or $1\frac{13}{20}$
15. 90
16. 150%
17. 31% of the income went to housing.
18. \$42,000
19. \$464

(Note: on problems 20 - 27 the answer must include the proper dimensions to be correct.)

20. $31\frac{1}{2}$ square feet
21. $31\frac{2}{3}$ feet

- 22. 240 square inches
- 23. 160 square inches
- 24. 200 inches
- 25. 314.2 square feet
- 26. 62.8 feet
- 27. 39 (linear) feet of wire
- 28. 200 m
- 29. $x = 16$
- 30. $x = 160$
- 31. $x = -\frac{15}{8}$ or $-1\frac{7}{8}$
- 32. 13
- 33. 10
- 34. $\frac{1}{3}$

- 35. 1120 students are enrolled in the Liberal Arts College

If you missed problems, you may wish to study the current Re-Entry Mathematics text, watch videotapes available in the TLC or study Schaum's Outline before taking the exam.

The Teaching and Learning Center has a copy of the current textbook and Pre-Algebra videotapes that can be viewed at the TLC.