

**To the Student:**

After your registration is complete and your proctor has been approved, you may take the Credit by Examination for Math 8A.

**WHAT TO BRING**

- several No. 2 pencils
- erasers
- notebook paper

**ABOUT THE EXAM**

The exam covers the Texas Essential Knowledge and Skills (TEKS) as directed by the Texas Education Agency (TEA). You will be tested over your addition, subtraction, multiplication, division, comparing, and ordering, approximation. These skills are essential to understanding basic, everyday-life mathematics and beginning algebra. You will work with estimation, formulas, irrational numbers, percents, decimals, fractions, and much more.

You may use a variety of materials to prepare for the CBE, but we strongly suggest that you purchase the textbook that Outreach & Distance Education uses for its Math 8A course. If you choose to purchase the textbook, you should study the following:

- Chapter 2 (sections 2-1, 2-3, 2-4, 2-5, 2-7, and 2-8)
- Chapter 3 (section 3-4)
- Chapter 4 (section 4-6)
- Chapter 5 (sections 5-2, 5-3, 5-4, and 5-5)
- Chapter 6 (sections 6-2, 6-3, 6-4, 6-5, and 6-9)
- Chapter 9 (section 9-7)
- Chapter 13 (sections 13-1 and 13-3)

The textbook is:

William Leschensky, Carol Malloy, Jack Price, Jim Rath, Yuria Alban, and Cindy Boyd. (1999). *Pre-Algebra: An Integrated Transition to Algebra & Geometry*, Texas ed. Westerville, OH: Glencoe/Mcgraw-Hill.

You will have three hours to complete the CBE, and you will need to bring notebook paper, pencils, and erasers. ***You will not be allowed to use a calculator.***

A sample exam and an answer key are included with this letter. The sample exam will give you a model of the types of questions that will be asked on your examination. It is *not* a duplicate of the actual exam. It is provided to illustrate the format of the CBE, not to serve as a comprehensive review sheet. If you study only the problems on the sample exam, you will ***not*** be adequately prepared for the CBE. You must study *all* of the objectives and be able to do the following:

- estimate sums, differences, products, and quotients of decimals and fractions;
- solve problems using formulas;
- approximate values of irrational numbers (squares and square roots);
- convert between standard form and scientific notation;
- select and use appropriate forms of integers, fractions, and decimals and appropriate operations to solve problems and justify the solution;
- compare and order integers, fractions, and decimals;
- add, subtract, multiply, and divide integers, fractions, and decimals in problem situations;
- convert between fractions, decimals, and percents.

For more information about CBE policies, visit <http://www.ode.ttu.edu/takeacbe/> or see your course Policies & Forms Guide.

Good luck on your examination!

## Formula Chart

### Perimeter

Square  $P = 4s$

Rectangle  $P = 2l + 2w$

### Circumference

Circle  $C = 2\pi r$  or  $C = \pi d$

### Area

Square  $A = s^2$

Rectangle  $A = lw$

Triangle  $A = \frac{1}{2} Bh$

Circle  $A = \pi r^2$

### Surface Area

Cube  $S = 6s^2$

Cylinder  $S = 2\pi rh + 2\pi r^2$

### Volume

Prism  $V = Bh$

Cylinder  $V = Bh$

Pyramid  $V = \frac{1}{3} Bh$

Cone  $V = \frac{1}{3} Bh$

$B$  = area of Base

Pythagorean Theorem  $a^2 + b^2 = c^2$

## CBE Practice Exam

Estimate problems 1-8. Round decimals to the nearest whole number and fractions to the nearest 0,  $\frac{1}{2}$ , or 1. Reduce fractions when possible.

1.  $24.02 + 17.46$

2.  $74.63 - 65.89$

3.  $21\frac{6}{7} + 5\frac{8}{27}$

4.  $28\frac{1}{6} - 4\frac{9}{17}$

5.  $9.7 \times 89.7$

6.  $6.3 \div 3.05$

7.  $\frac{4}{9} \times 20$

8.  $26\frac{1}{8} \div 1\frac{4}{5}$

Use the formula  $I = prt$  to answer the following question.

9. What is the interest on an account when the principal amount is \$200, the rate is 6%, and the time is 2 years?

Find the square roots for problems 10-12.

10.  $\sqrt{625}$

11.  $\sqrt{70}$

12.  $-\sqrt{81}$

Solve for A.

13.  $A^2 = 4$

Convert the following to standard form.

14.  $2.9 \times 10^{-2}$

15.  $-4.11 \times 10^7$

Convert the following to scientific notation.

16. 59,300

17. -0.00087

Finish the inequality with  $<$ ,  $>$ , or  $=$ .

18.  $-7 \underline{\hspace{1cm}} -5$

Order from least to greatest.

19. -4, 3, 0, and -2

Solve problems 20-44. Reduce fractions when possible.

20.  $-10 + 12$

21.  $(-9) + (-25)$

22.  $(-4) - (-1)$

23.  $-12 - 36$

24.  $-5 \times 6$

25.  $-8 \times -9$

26.  $72 \div -8$

27.  $-25 \div -5$
28.  $43.27 - 4.59$
29.  $-18.4 + (-28.7)$
30.  $(0.32)(-1.4)$
31.  $-40.3 \div (-0.62)$
32.  $1\frac{1}{3} + 2\frac{1}{6}$
33.  $\frac{7}{8} - \frac{7}{12}$
34.  $\frac{4}{9} \times \frac{6}{7}$
35.  $5\frac{5}{6} \times \frac{1}{14}$
36.  $12\frac{1}{4} \div \frac{7}{8}$
37.  $\frac{1}{6} \div \frac{1}{3}$
38. The Jones family drove to the mountains for vacation. They spent \$25.62 for gas, \$65.00 for a hotel, and \$39.78 for food. How much did they spend on the trip?
39. Yesterday, the high temperature was  $65^{\circ}$  and today the high temperature is only going to be  $54^{\circ}$ . How much lower will the high temperature be today than yesterday?
40. Suzie's recipe calls for  $\frac{1}{2}$  cup of milk,  $\frac{3}{4}$  cup of water, and  $\frac{1}{3}$  cup of oil.  
What is the total amount of liquid needed for the recipe?
41. Shane makes \$6.25 per hour at his job. How much money did he make last week if he worked 35 hours?
42. A family of 6 consumes 3 gallons of milk a week. How much is consumed by each person?
43. Three-fifths of 40 students passed the test. How many students did not pass the test?

44. A hotel charges \$79 per night per room. If Lisa and her friends use two rooms and stay in the hotel 3 nights, how much will they owe after their stay?

Answer questions 45-50 converting between fractions, decimals, and percents. Reduce fractions when possible.

45. What is  $\frac{7}{8}$  written as a decimal?
46. What is  $\frac{8}{200}$  written as a percent?
47. What is 0.90 written as a fraction?
48. What is 1.75 written as a percent?
49. What is 225% written as a fraction?
50. What is 400% written as a decimal?

## CBE Practice Exam Answer Key

- |                                  |                    |                          |
|----------------------------------|--------------------|--------------------------|
| 1. 40                            | 20. 2              | 37. $\frac{1}{2}$        |
| 2. 9                             | 21. -34            | 38. \$130.40             |
| 3. 27                            | 22. -3             | 39. $11^\circ$           |
| 4. 23                            | 23. -48            | 40. $1\frac{7}{12}$ cups |
| 5. 900                           | 24. -30            | 41. \$218.75             |
| 6. 2                             | 25. 72             | 42. $\frac{1}{2}$ gallon |
| 7. 10                            | 26. -9             | 43. 16 students          |
| 8. 13                            | 27. 5              | 44. \$474                |
| 9. \$24                          | 28. 38.68          | 45. 0.875                |
| 10. 25 or -25                    | 29. -47.1          | 46. 4%                   |
| 11. approximately<br>8.4 or -8.4 | 30. -0.448         | 47. $\frac{9}{10}$       |
| 12. -9                           | 31. 65             | 48. 175%                 |
| 13. 2 or -2                      | 32. $3\frac{1}{2}$ | 49. $2\frac{1}{4}$       |
| 14. 0.029                        | 33. $\frac{7}{24}$ | 50. 4                    |
| 15. -41,100,000                  | 34. $\frac{8}{21}$ |                          |
| 16. $5.93 \times 10^4$           | 35. $\frac{5}{12}$ |                          |
| 17. $-8.7 \times 10^{-4}$        | 36. 14             |                          |
| 18. <                            |                    |                          |
| 19. -4, -2, 0, 3                 |                    |                          |