

**To the Student:**

After your registration is complete and your proctor has been approved, you may take the Credit by Examination for Math 6A.

WHAT TO BRING

- No. 2 pencil
- Notebook paper

ABOUT THE EXAM

The examination is based on the Texas Essential Knowledge and Skills for sixth grade math. Since questions are not taken from any one source, you can prepare by reviewing any of the Texas state-adopted textbooks for sixth grade. If you do not have a textbook or any other study materials available locally, you may contact the Outreach & Distance Education Bookstore. The bookstore carries the textbook, *Mathematics in Action*, which is used with our Math 6A Distance Education course.

All of the questions on the Credit by Examination are multiple choice. Remember to show your work so you will have a chance of receiving partial credit for correct work even if you miss the final answer.

Below is a list of topics you will need to review before taking the exam. Following the list, you will find a series of sample questions similar to material that will be on the exam. It is a good idea to work carefully through the questions on the sample examination. When you are finished, check your work with the answer key at the end of this document. The answer key contains both the answers to the problems and the steps showing how each problem is to be worked.

Topics covered on this exam:

- read, write, order, and compare whole numbers, decimals, and fractions;
- estimate sums, differences, products, and quotients;
- add, subtract, multiply, and divide whole numbers;
- add and subtract decimals;
- round whole numbers and decimals;
- add and subtract fractions;

- factor whole numbers and find the least common multiple, the greatest common factor, and the prime factorization;
- calculate perimeter, circumference, area, and time;
- practice problem solving techniques;
- solve problems by collecting, organizing, and displaying data.

The TEKS that are covered are:

- 6.1 A-E
- 6.2 A-D
- 6.4 A
- 6.5 A
- 6.6 C
- 6.8 B
- 6.10 D
- 6.11 A-D
- 6.13 B

The majority of the problems on the exam will be in problem-solving format; therefore, it is very important that you are thoroughly familiar with TEKS 6.11. A problem-solving plan used in the Math 6A course is called the **UPSE** plan; following these steps for every problem will help you correctly identify the problem and solve it:

Understand: Read the problem. Reread the problem if necessary. Underline the question. Did you find any unnecessary information? If so, cross it out. What is the important information? Annotate the problem.

Plan a solution: What can you do to solve the problem? Can you make a sketch, make a chart, work backwards, or solve a simpler problem?

Solve the problem: Try your plan (from the step above). First estimate the answer, then solve.

Evaluate the answer: Reread the question. Does your answer make sense? Is it close to the estimate?

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

Take your time, show your work, and good luck on the examination!

**Sample Examination
for
Math 6A
Credit by Examination**

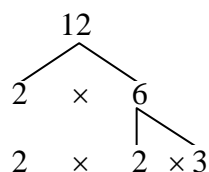
Work the following problems on your own paper and check your answers with the answer key.

1. Round 789.436 to the nearest hundredth.
2. What is the value of the digit 6 in the number 405.386?
3. Write in words the number 4,025,670.23.
4. Simplify $\frac{6}{21}$.
5. What is the least common multiple of 4 and 6?
6. What is the greatest common factor of 6 and 8?
7. What is the prime factorization of 12?
8. Place these decimals in order from least to greatest: 0.29, 0.3, 0.167, 0.35
9. Order these fractions from greatest to least: $\frac{3}{4}$, $\frac{1}{4}$, $\frac{3}{5}$, $\frac{1}{2}$.
10. Roderick was in school from 8:15 a.m. until 3:40 p.m. How long was he in school?
11. In the sequence {3, 9, 27, z , 243} what number should replace z ?
12. Write five fractions that are equivalent to $\frac{3}{4}$.
13. Find the area of a rectangular room that is 3 meters by 5 meters.
14. Jason saved \$34.53 in June, \$21.38 in July, and \$43.94 in August. How much more money did he save in June than July?
15. The movie theater has 5 seats in the first row, 8 seats in the second row, and 11 seats in the third row. If this pattern continues, how many seats will be in the fifth row?
16. Mrs. Mosely sold 47 boxes of candy for \$8 each. How much money did she collect?
17. 234 students are going on a field trip. If a maximum of 15 students can fit in each minibus, what is the *least* number of minibuses the organizers will need for the field trip?
18. Julie bought two shirts for \$7.98 each. She also looked at a pair of shoes that cost 17.95. If she paid for the shirts with \$20, how much change would she get back?

19. Robert bought 8 pizzas for a party. After the party there were $1\frac{1}{4}$ pizzas left. How many pizzas did Robert's friends eat?
20. When all tracks at a Tokyo train station are being used, 19 trains can leave the station each hour. About how many trains can leave in a 24-hour period?

Solutions to Sample Problems

1. 789.436—The 3 is in the hundredths place and the digit to the right of the hundredths place is 5 or more, so you round up; the answer is 789.44.
2. 6 thousandths
3. Four million, twenty-five thousand, six hundred seventy and twenty-three hundredths. Note we use the word *and* to indicate the decimal.
4. The GCF of 6 and 21 is 3 (factors of 6 = 1, 2, 3, 6; factors of 21 = 1, 3, 7; so the GCF is 3). $\frac{6 \div 3 = 2}{21 \div 3 = 7}$. Answer: $\frac{2}{7}$.
5. multiples of 4 = 4, 8, 12; multiples of 6 = 6, 12; 12 is the first multiple that both 4 and 6 have in common, so it is the LCM.
6. factors of 6 = 1, 2, 3, 6; factors of 8 = 1, 2, 4, 8. The greatest factor that 6 and 8 have in common is 2, so 2 is the GCF.
7. You will find a factor tree useful to solve this problem.



The prime factorization is $2 \times 2 \times 3$ or $2^2 \times 3$

8. 0.167, 0.29, 0.3, 0.35 (Remember that you compare decimals from the left, starting at the decimal place.)
9. The least common denominator is 20, so $\frac{3}{4} = \frac{15}{20}$, $\frac{1}{4} = \frac{5}{20}$, $\frac{3}{5} = \frac{12}{20}$, and $\frac{1}{2} = \frac{10}{20}$.
The answer is $\frac{3}{4}$, $\frac{3}{5}$, $\frac{1}{2}$, $\frac{1}{4}$.
10. 8:15 to 3:15 = 7 hours and 15 to 3:40 = 25 minutes, so the answer is 7 hours and 25 minutes.
11. $3 \times 3 = 9$, $9 \times 3 = 27$, $27 \times 3 = \underline{81}$, $81 \times 3 = 243$; $z = 81$

$$\frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$$

$$\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$$

12. $\frac{3}{4} \times \frac{4}{4} = \frac{12}{16}$

$$\frac{3}{4} \times \frac{5}{5} = \frac{15}{20}$$

$$\frac{3}{4} \times \frac{6}{6} = \frac{18}{24}$$

(Each time the fraction $\frac{3}{4}$ was multiplied by 1.)

13. The area of rectangle = $6 \times w$; $3 \times 5 = 15 \text{ m}^2$

14. $\$34.53 - \$21.38 = \$13.15$ more saved in June than July.

15. A t-chart should help you solve this problem:

Row	No. of seats
1	5
2	8 (+3)
3	11 (+3)
4	14 (+3)
5	17 (+3)

Answer: 17 seats will be in the fifth row.

16. $47 \times 8 = \$376$

17. $\frac{234}{15} = 15 \text{ R } 9$. Sixteen minibuses will be needed (15 minibuses will be filled; the 16th bus will have 9 students in it).

18. $\$7.98 + \$7.98 = \$15.96$

$$\$20.00 - \$15.96 = \$4.04$$

$$7 = 8\frac{4}{4}$$

19. $\frac{-1\frac{1}{4}}{6\frac{3}{4}} = \frac{-1\frac{1}{4}}{6\frac{3}{4}}$

$$6\frac{3}{4}$$

20. $20 \times 24 = 480$ The actual answer will be a little less than 480 trains in 24 hours.