

**To the Student:**

After your registration is complete and your proctor has been approved, you may take the Credit by Examination for MATH 7A.

**WHAT TO BRING**

- several sharpened No. 2 pencils
- lined notebook paper

**ABOUT THE EXAM**

The examination for the first semester of Mathematics consists of 40 questions, of which 35 are multiple choice and the rest are short answer. The exam is based on the Texas Essential Knowledge and Skills (TEKS) for this subject. The full list of TEKS is included in this document (it is also available online at the Texas Education Agency website, <http://www.tea.state.tx.us/>). The TEKS outline specific topics covered in the exam, as well as more general areas of knowledge and levels of critical thinking. Use the TEKS to focus your study in preparation for the exam.

The examination will take place under supervision, and the recommended time limit is three hours. You may not use any notes or books. A percentage score from the examination will be reported to the official at your school.

In preparation for the examination, review the TEKS for this subject. All TEKS are assessed. A list of review topics is included in this document to focus your studies. It is important to prepare adequately. Since questions are not taken from any one source, you can prepare by reviewing any of the state-adopted textbooks that are used at your school. The textbook used with our MATH 7A course is:

Charles, Illingworth, McNemar, Mills, Ramirez, and Reeves. (2008).  
*Texas Mathematics, Course 2*. Boston, MA: Pearson Prentice Hall.  
ISBN 0-13-134018-2

The practice exam included in this document 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 examination. It is provided to illustrate the format of the exam, not to serve as a complete review sheet.

Good luck on your examination!

## MATH 7A Concepts

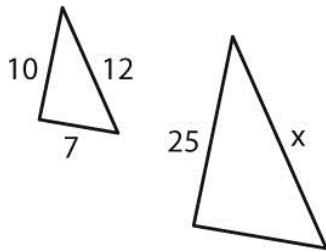
<b>Rational Numbers</b>	<b>Ratios and Proportional Relationships</b>	<b>Probability</b>	<b>Linear Relationships</b>
Relationship between sets of rational numbers	Unit rates	Experimental probability of simple events	Linear relationships in the form $y = mx + b$
Operations with rational numbers (addition, subtraction, multiplication, and division)	Constant rates of change	Experimental probability of compound events	Writing and graphing equations in the form $y = mx + b$
Real-world applications with rational numbers	Proportional relationships and graphs	Making predictions with experimental probability	
	Converting between measurement systems	Theoretical probability of simple events	
	Percent increase and decrease	Theoretical probability of compound events	
	Mark-up and mark-down	Making predictions with theoretical probability	
	Applications of percent		
	Similar shapes and proportions		
	Using similar shapes		
	Similar shapes and scale drawings		
	Ratios and pi		

# MATH 7A Practice Exam

**Multiple Choice.** Choose the best answer for each question.

- To which set or sets does the number 8 belong?
  - integers only
  - rational numbers only
  - integers and rational numbers only
  - whole numbers, integers, and rational numbers
- What is the product of  $(-2.6)(4.8)(-3)$ ?
  - 37.44
  - 374.4
  - 3.744
  - 37.44

- The two triangles below are similar. What is the length of side  $x$ ?



- 30
  - 27
  - 48
  - 22
- Why does this table **not** show a proportional relationship?

<b>Time in Weeks (<math>x</math>)</b>	2	4	6	8
<b>Savings in Dollars (<math>y</math>)</b>	60	120	240	480

- The ratio  $x : y$  equals 1 : 30.
- The ratio  $x : y$  is not constant.
- The savings does not stay constant.
- The savings is not increasing fast enough.

*continued* →

5. Find the constant of proportionality, given the information in the table.

<b>Number of pounds</b>	2	3	8
<b>Cost (\$)</b>	19	28.50	76

- A. 9.50  
B. 4.50  
C. 11  
D. 5
6. Li rolls a number cube that has sides labeled 1 to 6 and then flips a coin. What is the probability that she rolls an odd number and flips tails?

- A.  $\frac{1}{8}$   
B.  $\frac{1}{4}$   
C.  $\frac{1}{2}$   
D.  $\frac{3}{4}$

7. If Cole flips a coin three times, what is the probability that he will flip tails at least twice?

- A.  $\frac{1}{8}$   
B.  $\frac{3}{8}$   
C.  $\frac{4}{8}$   
D.  $\frac{7}{8}$

*continued* →

8. **Deirdre's Experimental Outcomes**

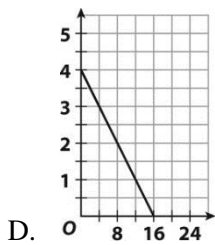
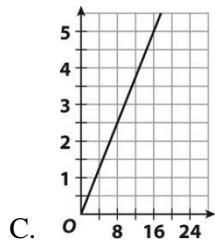
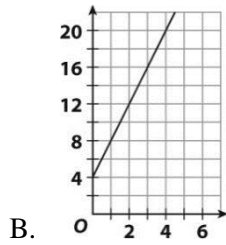
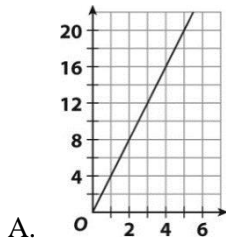
Deirdre flipped a coin then spun a spinner 5 times. The results are shown in the table below. What is the experimental probability that Deirdre spun green?

<b>Trial</b>	<b>Outcome</b>
1	Red, H
2	Red, T
3	Blue, T
4	Green, H
5	Blue, T

- A.  $\frac{1}{4}$
- B.  $\frac{1}{5}$
- C.  $\frac{4}{5}$
- D.  $\frac{1}{3}$

*continued* →

9. Which graph represents the relationship  $y = 4x$ ?



10. Mike and Joe are both plumbers. Mike charges an initial fee of \$100 plus an hourly fee of \$60. Joe charges an initial fee of \$50 plus an hourly fee of \$75. If Mike and Joe each have 3-hour jobs, who earns more money? How much more? Write an equation for each situation and show all work to justify your answer.
11. A deli prepares sandwiches with one type of bread (rye or wheat), one type of meat (ham, turkey, or chicken), and one type of cheese (cheddar or Swiss). Each combination is equally likely. Make a tree diagram to find the sample space for the compound event.

## MATH 7A Practice Exam Answer Key

1. D
2. D
3. A
4. B
5. A
6. B
7. C
8. B
9. A
10. Mike will earn \$5 more.  
Mike:  $y = 100 + 60x$  ; \$280 for 3 hr  
Joe:  $y = 50 + 75x$ ; \$275 for 3 hr

11. Answer should be a tree diagram with these options:

