

ACCUPLACER®

Introduction for Students

The purpose of ACCUPLACER tests is to provide you with useful information about your academic skills in math, English, and reading. The results of the assessment, in conjunction with your academic background, goals, and interests, are used by academic advisors and counselors to determine your course selection.

You cannot "pass" or "fail" the placement tests, but it is very important that you do your very best on these tests so that you will have an accurate measure of your academic skills.

NVCC uses the Accuplacer computerized adaptive placement test to assess your basic skills in English, reading and mathematics. The test results will be used by advisors and counselors to make decisions about the level of courses you are prepared to take. Prior to signing up for the test, you must:

- apply to the College Admissions Office;
- pay a \$20 application fee; and
- receive a NVCC Banner Student ID number.

Accuplacer Study Guide

It is important to be prepared for the Accuplacer test. Students should take the exam seriously and do their best in order to be placed in the appropriate classes.

Studying for the Accuplacer test takes time and dedication. Here are some general ideas for studying:

- To prepare for the math portion of the test, find a reliable source for practice problems; the best way to learn math is actually to do the problems; memorization usually is not helpful.
- Review arithmetic, elementary algebra, pre-calculus, geometry, trigonometry, and any other math that might be on the test.
- Review vocabulary words in preparation for the essay and reading portions of the test.
- Practice by reading passages from magazines, newspapers, and online articles and then determining the main and supporting ideas of the passages.



Why Should You Prepare for Accuplacer

Learning the Accuplacer test format is an inherent part of your Accuplacer prep plan. You will not be able to work out your prep plan if you are not aware of the test format in detail. Most students are aware that Accuplacer tests are untimed and the questions asked are multiple choice questions (except for the Written Essay test) in which they have to choose the correct answer from the given options. Additionally, one cannot

Prepare! Study! Succeed!

'pass' or 'fail' the Accuplacer tests as there are no specific 'passing standards'. In spite of these facts, doing well in Accuplacer is not as easy as it seems. One cannot hope to do well in the Accuplacer tests by simply walking into the test center and answering the questions as they appear on the computer screen. The following reasons make it apparent that taking the Accuplacer tests without adequate preparation can have drastic repercussions:

1. Even though the correct answer is right in front of you and you have to just identify it, you will need to be proficient with the subject being questioned or else you will choose the wrong option. This is because the multiple options presented will only confuse you further as they could be quite close to the actual answer and some of the answer options will be such that they will deliberately mislead you into choosing the wrong answer option.
2. The computerized format of the Accuplacer tests is such that it will not allow you to come back to a question to amend the answer once you have already moved on to the next question. Therefore, you will need to concentrate and think hard before choosing the answer because there is no turning back after you have moved on to the next question.
3. The computer-adaptive format of the Accuplacer tests is designed in such a way that the questions asked will be adjusted according to the answering ability of the test-taker. In other words, the difficulty level of the questions asked depends upon whether you have been able to answer similar questions correctly or not. If you answer a question correctly, then the next question asked is of a higher difficulty level or else it is an easier question. At the end of a test, the average difficulty level of the questions that you have answered correctly gives an exact measurement of your skill level in the subject area being assessed. The catch here is that questions of a higher difficulty level carry more weight as compared to the easier questions. Therefore, if you answer questions incorrectly, you will keep getting easy questions and this will affect your Accuplacer scores.
4. Accuplacer tests for assessing your academic skills will require you to recall important formulae for solving the problems presented. One cannot hope to score high in Accuplacer tests without spending time in reviewing the important formulae and concepts of Math and Grammar.
5. Despite the fact that one cannot 'fail' the Accuplacer tests, your Accuplacer scores will be crucial in determining how things shape up as you ready yourself for starting your college work. If you have low Accuplacer scores, you will be detailed for attending developmental classes before commencing your regular college work. For most college subjects, the college authorities would have laid down the minimum Accuplacer scores required in the related Accuplacer test. Therefore, do not make the mistake of completely relaxing in your Accuplacer prep because of the 'cannot fail' clause in the Accuplacer test format. You will definitely need good scores if you wish to enroll in a college program of your choice.

How to Prepare for Accuplacer

It is very important that your Accuplacer scores are an exact representation of your skill levels. Inadequate preparation and avoidable mistakes while taking the tests may lead to low Accuplacer scores and this will affect your skill levels as presented to the college authorities. Therefore, it is evident that one does need to prepare for the Accuplacer tests diligently in order to score well and to demonstrate a high level of academic skills. The basic concepts of grammar, trigonometry, geometry, algebra and arithmetic are such that one tends to forget them very easily if he has not reviewed them before taking a test based on these concepts. The importance of preparing for Accuplacer tests increases manifold if you have been out of touch with your studies for more than a year.

You will need study materials for preparing for the Accuplacer tests. Your study materials should include either all or at least some of the study materials listed below:

- **Important web links:** You need to have the addresses of important websites that will assist you in your preparation. Two such most important web links are the official website of Accuplacer, www.collegeboard.com/student/testing/accuplacer, www.testprepreview.com/accuplacer_practice.htm and nvcc.commnet.edu. Make the best use of the information available at these websites for working out your preparation plan. You will learn the Accuplacer test format from the official website and the college website will provide you with important information about the admission policies and the conduct of the Accuplacer tests. You will also learn helpful hints and take practice exams at the above websites.
- **Study Books:** Some students find it useful to study for Accuplacer from SAT study books as they contain an extensive review of the content being tested by Accuplacer. These books are easily available in local bookstores and your local library. You will find your high school books to be equally useful for reviewing the basic concepts of Math and Grammar.
- **Flashcards:** These hand held cards are a time tested method for memorizing formulae and concepts. Ensure that you have a set of flashcards for reviewing important formulae, concepts, facts and figures. Go over the cards whenever you have some free time at hand. This could be when you are travelling or just before taking the test.
- **Prep Assistance:** You can take the assistance of a prep course or you can get in touch with students who have already attained high Accuplacer scores to help you in preparing for Accuplacer. This way you would get first hand information on how to prepare for the test and you will also be acquainted with tips and techniques for doing well in Accuplacer.
- **Academic Center for Excellence:** Visit the ACE for help with the Accuplacer. The ACE has tutors available to help you study and learn the various topics assessed on the Accuplacer.

Study Hard!

Success always comes at a price! You cannot expect to succeed in a test without having to toil for it. You will be making a mistake if you underestimate the effort that is needed to be put in for doing well in the Accuplacer tests. Remember that low scores will make you spend more time in developmental classes which will not earn you any credits. Therefore, you need to prepare well for excelling in the Accuplacer tests so that you are able to start your college work at the earliest.

Test Day Essentials

- Bring your NVCC Banner Student ID number that you received from the Admissions office when you applied to the College.
- Scratch paper and pencils will be provided.
- Cell phones and other electronic devices are strictly prohibited. Do **not** bring calculators, textbooks, protractors, notebooks, dictionaries, food or drinks.
- The entire test takes approximately two to three hours, so plan your time accordingly.
- Once you have completed the test, a copy of your score report will be given to you. It is then your responsibility to sign up for a new student advising/registration session to plan your course selection.

How It Works

Computer Adaptive Testing

ACCUPLACER is an adaptive test. This means that the questions are chosen for you on the basis of your answers to previous questions. This technique selects just the right questions for your ability level. Because the test works this way, you must answer every question when it is first given. Each test is untimed so that you can give each question as much thought as you wish. You can change your answer to a particular question before moving on to the next question, but you cannot leave a question out or come back to it later to change your answer.

If you do not know the answer to a question, try to eliminate one or more of the choices. Then pick from the remaining choices.

Testing Time

The entire test takes approximately two to three hours, so plan your time accordingly.

What to Take With You to the Test

Bring your NVCC Banner Student ID number that you received from the Admissions office when you applied to the College.

Testing Regulations

Scratch paper and pencils will be provided. Cell phones and other electronic devices are strictly prohibited. Do **not** bring calculators, textbooks, protractors, notebooks, dictionaries, food or drinks. NVCC will disregard a test score if there is reason to question its validity.

At the End of the Test

Once you have completed the test, a copy of your score report will be given to you. It is then your responsibility to sign up for a new student advising/registration session to plan your course selection.

Making an Appointment for Testing

Call the Testing Center at (203) 575-8215 to schedule your test so you can meet with your advisor and register for courses as soon as possible.

Students with Disabilities

If you require test accommodations due to a documented disability, please contact the testing center at (203) 575-8215 for information concerning your needs.

ACCUPLACER Tests

The placement tests may consist of:

- Answering questions covering reading, mathematics, writing and language use skills
- Writing an essay on a familiar topic
- All questions are multiple choice, except the essay

Sentence Skills

There are 20 Sentence Skills questions of two types.

- The first type is **sentence correction** questions that require an understanding of sentence structure. These questions ask you to choose the most appropriate word or phrase to substitute for the underlined portion of the sentence.
- The second type is **construction shift** questions. These questions ask that a sentence be rewritten according to the criteria shown while maintaining essentially the same meaning as the original sentence.

Within these two primary categories, the questions are also classified according to the skills being tested. Some questions deal with the logic of the sentence, others with whether or not the answer is a complete sentence, and still others with the relationship between coordination and subordination.

Reading Comprehension

There are 20 questions of two primary types on the Reading Comprehension test.

- The first type consists of a reading passage followed by a question based on the text. Both short and long passages are provided. The reading passages can also be classified according to the kind of information processing required including explicit statements related to the main idea, explicit statements related to a secondary idea, application, and inference.
- The second type of question, sentence relationships, presents two sentences followed by a question about the relationship between these two sentences. The question may ask, for example, if the statement in the second sentence supports that in the first, if it contradicts it, or if it repeats the same information.

Arithmetic Test

This test measures your ability to perform basic arithmetic operations and to solve problems that involve fundamental arithmetic concepts. There are 17 questions on the Arithmetic tests divided into three types.

- Operations with whole numbers and fractions: topics included in this category are addition, subtraction, multiplication, division, recognizing equivalent fractions and mixed numbers, and estimating.
- Operations with decimals and percents: topics include addition, subtraction, multiplication, and division with decimals. Percent problems, recognition of decimals, fraction and percent equivalencies, and problems involving estimation are also given.
- Applications and problem solving: topics include rate, percent, and measurement problems, simple geometry problems, and distribution of a quantity into its fractional parts.

Elementary Algebra

A total of 12 questions are administered in this test.

- The first type involves operations with integers and rational numbers, and includes computation with integers and negative rationals, the use of absolute values, and ordering.
- A second type involves operations with algebraic expressions using evaluation of simple formulas and expressions, and adding and subtracting monomials and polynomials. Questions involve multiplying and dividing monomials and polynomials, the evaluation of positive rational roots and exponents, simplifying algebraic fractions, and factoring.
- The third type of question involves the solution of equations, inequalities, word problems. solving linear equations and inequalities, the solution of quadratic equations by factoring, solving verbal problems presented in an algebraic context, including geometric reasoning and graphing, and the translation of written phrases into algebraic expressions.

College Level Math Test

There are 20 questions on the College-Level Mathematics.

The College-Level Mathematics test assesses from intermediate algebra through precalculus.

- Algebraic operations includes simplifying rational algebraic expressions, factoring, expanding polynomials, and manipulating roots and exponents.
- Solutions of equations and inequalities includes the solution of linear and quadratic equations and inequalities, equation systems and other algebraic equations.
- Coordinate geometry includes plane geometry, the coordinate plane, straight lines, conics, sets of points in the plane, and graphs of algebraic functions.

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- Applications and other algebra topics ask about complex numbers, series and sequences, determinants, permutations and combinations, fractions, and word problems.
- The last category, functions and trigonometry, presents questions about polynomials, algebraic, exponential, logarithmic and trigonometric functions.

Written Essay

This test measures your ability to write effectively, which is critical to academic success.

Your writing sample will be scored on the basis of how effectively it communicates a whole message to the readers for the stated purpose. Your score will be based on your ability to express, organize, and support your opinions and ideas, not the position you take on the essay topic. The following five characteristics of writing will be considered:

- **Focus**—The clarity with which you maintain your main idea or point of view
- **Organization**—The clarity with which you structure your response and present a logical sequence of ideas
- **Development and Support**—The extent to which you elaborate on your ideas and the extent to which you present supporting details
- **Sentence Structure**—The effectiveness of your sentence structure
- **Mechanical Conventions**—The extent to which your writing is free of errors in usage and mechanics

Tips for Taking ACCUPLACER

1. Relax! ACCUPLACER was designed to help you succeed in college. Your score helps you and your advisor determine which courses are most appropriate for your current level of knowledge and skills. Once you identify your academic strengths and needs, you can get the help you need to improve underdeveloped skills before they can interfere with your learning.
2. You will be able to concentrate better on the test if you get plenty of rest and eat properly prior to the test. You should also arrive a few minutes early so you can find the testing area, bathrooms, etc., and gather your thoughts before the test begins.
3. Pay careful attention to directions, and be sure you understand the directions before you begin each test.
4. You should understand that this is an adaptive test. Questions are chosen for you on the basis of your answers to previous questions. Because the test works this way, you must answer every question; you may change the answer on a particular question before you have moved ahead to another question.
5. If you do not know the answer to a question, try to eliminate one or more of the choices.
6. Remember to bring a picture I.D.

FAQs

Can I bring something to eat or drink while testing?

Food and drink are strictly prohibited.

Do I need to bring identification?

You must bring your NVCC Banner Student ID number.

Am I allowed to bring my cell phone?

Cell phones and other electronic devices are strictly prohibited.

Why do we have to take the test?

The purpose of taking a placement test is to identify your academic strengths and needs and plan an appropriate schedule of course work.

What is Accuplacer?

Accuplacer is a computerized adaptive placement test to assess your basic skills in English, reading and mathematics.

If I have a question during the test, can I ask someone next to me?

There is no talking permitted in the testing center once test sessions are underway. If you have a question or problem during the test, raise your hand and wait for a proctor to assist you. Proctors are not permitted to answer questions about the test items.

Is there a testing fee?

No. Testing is included as part of your \$20 application fee.

Can I retake the Accuplacer?

If you would like to retake your placement test, you must:

- complete a "Challenge to the Placement Test" form, which is available in the Testing Center.
- have the form signed by the appropriate division director or his/her designee.
- schedule an appointment to retake the test.

Only one retest is allowed. You may not retest on the same day as your initial testing. Scores are valid for two years from your initial testing date.

Preparation

You're encouraged to review basic concepts in arithmetic, trigonometry and algebra before taking the placement test, especially if you have been away from school for more than a year.

Test preparation resources are available at the following Web sites:

<http://www.collegeboard.com/student/testing/accuplacer/>

<http://www.math.com/students/practice.html>

http://www.testprepreview.com/accuplacer_practice.htm

<http://www.nv3.commnet.edu/bcaserta/mathreview/>

<http://www.purplemath.com/modules/>

<http://www.algebrahelp.com/>

<http://grammar.ccc.commnet.edu/grammar>

ACCUPLACER®

Preparation & Sample Questions - Math

To ensure that test scores accurately represent your skill levels, you may wish to review basic concepts in reading, grammar, arithmetic, trigonometry, and algebra before taking ACCUPLACER, especially if you have been away from school for more than a year. Many students find that SAT Preparation or SAT review books are helpful in refreshing their basic skills. These are available at local bookstores, public libraries, and online at the [SAT Preparation Center™](#).

<h2>Arithmetic</h2>

Answer the questions without using a calculator.

1. Find the difference: $4\frac{3}{5} - 2\frac{2}{3}$
 - a. $2\frac{1}{2}$
 - b. $6\frac{3}{4}$
 - c. $1\frac{14}{15}$
 - d. $2\frac{1}{15}$

2. What is $\frac{5}{6}$ of 78 ?
 - a. 60
 - b. 65
 - c. 72
 - d. 75

3. Find: $7 - 2.042$
 - a. 2.042
 - b. 4.958
 - c. 5.042
 - d. 5.958

4. $\frac{91}{0.28}$ is approximately equal to
 - a. 3
 - b. 30
 - c. 300
 - d. 3000

5. What percent of 420 is 63 ?
 - a. 15%
 - b. 12%
 - c. 7%
 - d. 63%

6. In a fruit bowl, there are four apples, three oranges, seven peaches, and five bananas. What is the ratio of peaches to fruit?
 - a. $\frac{3}{19}$
 - b. $\frac{4}{19}$
 - c. $\frac{5}{19}$
 - d. $\frac{7}{19}$

7. 17% is equal to all of the following except

- a. $\frac{9}{100} + \frac{8}{100}$
 b. 17
 c. $0.1 + 0.07$
 d. $0.2 - 0.03$
8. Bob's annual salary was **\$24,000** last year. This year he received a **4%** raise. What is his annual salary this year?
- a. **\$24,960**
 b. **\$25,040**
 c. **\$26,120**
 d. **\$30,000**

9. Find: $-3 + 4(-2)$
- a. -2
 b. -1
 c. 14
 d. -11

10. Find: $-2 + 5 - 3(1 - 2)^2$
- a. 0
 b. 3
 c. 6
 d. 9

ANSWERS and SOLUTIONS: Arithmetic

1. Answer: c
 2. Answer: b
 3. Answer: b
 4. Answer: c
 5. Answer: a
 6. Answer: d
 7. Answer: b
 8. Answer: a
 9. Answer: d
 10. Answer: a

Arithmetic solutions

1. One method to subtract mixed numbers is to change them to improper fractions. Borrowing is not necessary using this method:

$$\begin{aligned}
 4\frac{3}{5} - 2\frac{2}{3} &= \frac{23}{5} - \frac{8}{3} \\
 &= \frac{23}{5} \cdot \frac{3}{3} - \frac{8}{3} \cdot \frac{5}{5} \\
 &= \frac{69}{15} - \frac{40}{15} \\
 &= \frac{29}{15} \\
 &= 1\frac{14}{15}
 \end{aligned}$$

= 300

2. What is $\frac{5}{6}$ of 78 ?
In mathematics, 'of' means to multiply:

$$\begin{aligned} \frac{5}{6} \cdot 78 &= \frac{5}{6} \cdot \frac{78}{1} \\ &= \frac{5}{\cancel{6}^1} \cdot \frac{\cancel{78}^{13}}{1} \\ &= \frac{5 \cdot 13}{1 \cdot 1} \\ &= \frac{65}{1} \\ &= 65 \end{aligned}$$

3. Find: **7 - 2.042**
Rewrite the 7 as 7.000 then place the numbers in a column, lining up decimal points, and subtract:

$$\begin{array}{r} \overset{6}{.} \overset{9}{1} \overset{9}{0} \overset{0}{0} \\ - 2 \overset{0}{.} \overset{4}{0} \overset{2}{0} \\ \hline 4 \overset{9}{.} \overset{5}{0} \overset{8}{0} \end{array}$$

4. $\frac{91}{0.28}$ is approximately equal to ?
Move the decimal point to the right two places in the numerator and denominator. This is a shortcut for multiplying the original fraction by 100/100:

$$\frac{9100}{28}$$

Then round 9100 down to 9000 and round 28 up to 30:

$$\frac{9000}{30}$$

Divide:

$$\begin{array}{r} 300 \\ \underline{900} \\ 300 \\ \underline{300} \\ 1 \end{array}$$

5. What percent of 420 is 63 ?
There are many different methods used to do this problem. One way to view it is:
a part (63) divided by the total (420).

Use long division to obtain:

$$\frac{63}{420} = 0.15$$

Then multiply by 100%: **15%**

6. In a fruit bowl, there are four apples, three oranges, seven peaches, and five bananas. What is the ratio of peaches to fruit?
The ratio of 7 peaches to 19 pieces of fruit is: 7 to 19 or 7 divided by 19

$$\frac{7}{19}$$

or $\frac{7}{19}$

7. **17%** is equal to all of the following except ?
17 percent means 17 per one hundred.

- a. $\frac{9}{100} + \frac{8}{100}$ equals 17 per one hundred
b. **17** does not equal 17 per one hundred
c. **0.1 + 0.07 = 0.17** which equals 17 per one hundred
d. **0.2 - 0.03 = 0.17** which equals 17 per one hundred
e. Final answer: **17**

8. Bob's annual salary was **\$24,000** last year. This year he received a **4%** raise. What is his annual salary this year?
Multiply 4% by 24000:
 $0.04(24000) = 960$
Add 960 to last year's salary to obtain: \$24,960

$$= -11$$

9. Find: $-3 + 4(-2)$

Order of operations: parentheses;
exponents; multiplication or division
left to right; addition or subtraction
left to right.

Following order of operations:

$$\begin{aligned} & -3 + 4(-2) \\ & = -3 + (-8) \end{aligned}$$

10. Find: $-2 + 5 - 3(1 - 2)^2$

Following order of operations:

$$\begin{aligned} & -2 + 5 - 3(1 - 2)^2 \\ & = -2 + 5 - 3(-1)^2 \\ & = -2 + 5 - 3(1) \\ & = -2 + 5 - 3 \\ & = 3 - 3 \\ & = 0 \end{aligned}$$

Elementary Algebra

Answer the questions without using a calculator.

1. Evaluate $2x^2 - y^2 - z$ if $x = 3$, $y = -1$ and $z = -2$

- a. 15
- b. 17
- c. 19
- d. 21

2. Solve for x : $1 - 3(x - 4) = 2(3x + 1) - 7$

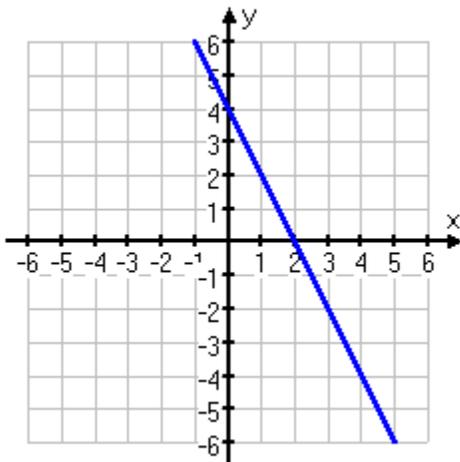
- a. $\frac{7}{4}$
- b. 2
- c. $\frac{1}{3}$
- d. 7

3. Solve for y : $ax + by = c$

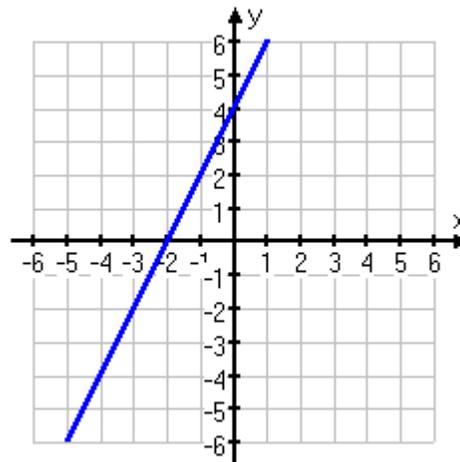
- a. $y = c - ax - b$
- b. $y = \frac{c}{a} - x - b$
- c. $y = \frac{c - ax}{b}$
- d. $y = \frac{c - b}{ax}$

4. The length of a rectangle is **8 feet** longer than its width. If the perimeter of the rectangle is **236 feet**, what is the length of the rectangle?
- 114 feet**
 - 57 feet**
 - 55 feet**
 - 63 feet**
5. The graph of $2x + y = 4$ is

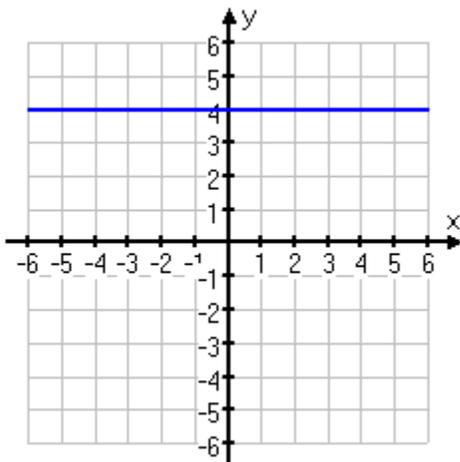
a.



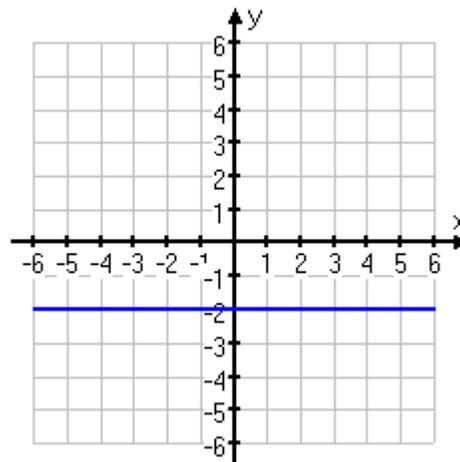
b.



c.



d.



6. Jane donates 2% of her annual salary to charity and Sam donates 1% of his annual salary to charity. The total of Jane and Sam's donations is \$620. If Jane makes \$1000 more than Sam, how much is Jane's annual salary?
- \$20,000**
 - \$21,000**

- c. **\$24,000**
 d. **\$30,000**
7. Find the product of the binomials: $(2a - 3b)(a + 2b)$
- $2a^2 + ab - 6b^2$
 - $-12a^2b^2$
 - $2a^2 - 6b^2$
 - $2a^2 + 7ab - 6b^2$

8. Simplify: $\frac{4x^2}{2x + 4x^2}$
- $\frac{1}{2x + 1}$
 - $2x + 1$
 - $\frac{2x}{1 + 2x}$
 - $\frac{1}{2}$

9. Raise to the power indicated: $(4\sqrt{3x})^2$
- 12x**
 - 48x**
 - 7x**
 - $16\sqrt{3x}$

10. Solve for x : $x^2 - 4a^2 = 0$
- $4a^2$**
 - $\pm a$
 - ± 2
 - $\pm 2a$

ANWERS & SOLUTIONS: Elementary Algebra Solutions

- | | |
|--------------|--------------|
| 1. Answer: c | 5. Answer: a |
| 2. Answer: b | 6. Answer: b |
| 3. Answer: c | 7. Answer: a |
| 4. Answer: d | 8. Answer: c |

9. Answer: b

10. Answer: d

1. Evaluate $2x^2 - y^2 - z$ if $x = 3$, $y = -1$ and $z = -2$

Substitute the values for the variables; follow order of operations to evaluate:

$$\begin{aligned} & 2(3)^2 - (-1)^2 - (-2) \\ & = 2(9) - (1) - (-2) \\ & = 18 - (1) + (+2) \\ & = 17 + 2 \\ & = 19 \end{aligned}$$

2. Solve for x : $1 - 3(x - 4) = 2(3x + 1) - 7$

Distribute:

$$1 - 3x + 12 = 6x + 2 - 7$$

Collect like terms:

$$-3x + 13 = 6x - 5$$

Add $3x$ to both sides of the equal sign:

$$-3x + 13 + 3x = 6x - 5 + 3x$$

$$13 = 9x - 5$$

Add 5 to both sides:

$$18 = 9x$$

Divide both sides by 9:

$$2 = x$$

3. Solve for y : $ax + by = c$

Subtract ax from both sides:

$$by = c - ax$$

Divide both sides by b :

$$y = \frac{c - ax}{b}$$

4. Draw a picture of a rectangle.

Setup: Let W = width; L = Length

Translate the phrases into math:

The length of a rectangle is **8 feet** longer than its width: $L = W + 8$

The perimeter is the total distance around the rectangle:

$$236 = W + L + W + L$$

$$236 = 2L + 2W$$

Substitute $L = W + 8$ and solve:

$$236 = 2(W + 8) + 2W$$

Distribute the 2:

$$236 = 2W + 16 + 2W$$

Collect like terms:

$$236 = 4W + 16$$

Subtract 16 from both sides:

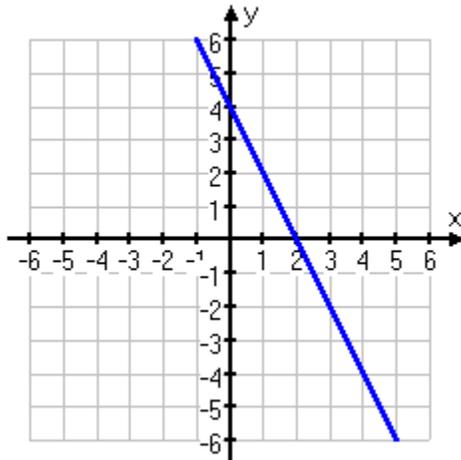
$$220 = 4W$$

Divide both sides by 4:

$$55 = W$$

Be sure to answer the question: 'What is the length of the rectangle?'
 $L = W + 8 = 55 + 8 = 63$. The length of the rectangle is 63 feet

5. The graph of $2x + y = 4$ is



Find two points that satisfy the given equation; plot them, draw a line through the points.

Easy points to find are the intercepts:

x-intercept: $2x + (0) = 4$

$$2x = 4$$

$$x = 2$$

y-intercept: $2(0) + y = 4$

$$y = 4$$

6. The two points are: $(2, 0)$ and $(0, 4)$. Plot them and draw the line.
7. Setup: Let J = Jane's annual salary; S = Sam's annual salary

Translate the words into math:

Jane donates 2% of her annual salary: $0.02J$

Sam donates 1% of his annual salary: $0.01S$

The total of Jane and Sam's donations is \$620: $0.02J + 0.01S = 620$

Jane makes \$1000 more than Sam: $J = S + 1000$ or $J - 1000 = S$

Substitute $J - 1000$ for S in the first equation:

$$0.02J + 0.01(J - 1000) = 620$$

Solve for J :

$$0.02J + 0.01J - 10 = 620$$

$$0.03J - 10 = 620$$

Add 10 to both sides:

$$0.03J = 630$$

Divide both sides by 0.03:

$$J = 21000$$

Jane's annual salary is \$21,000

8. Use FOIL to multiply:

$$\begin{aligned} & (2a - 3b)(a + 2b) \\ &= 2a^2 + 4ab - 3ab - 6b^2 \\ &= 2a^2 + ab - 6b^2 \end{aligned}$$

9. Factor the denominator and cancel common factors:

$$\begin{aligned} \frac{4x^2}{2x + 4x^2} &= \frac{4x^2}{2x(1 + 2x)} \\ &= \frac{\overset{2x}{\cancel{4x^2}}}{\underset{1}{\cancel{2x}}(1 + 2x)} \\ &= \frac{2x}{1 + 2x} \end{aligned}$$

10. Raise each factor inside the parentheses to the second power and multiply:

$$\begin{aligned} (4\sqrt{3x})^2 &= 4^2(\sqrt{3x})^2 \\ &= 16 \cdot 3x \\ &= 48x \end{aligned}$$

11. Solve for x : $x^2 - 4a^2 = 0$

This is a quadratic equation with two solutions.

Isolate x^2 :

$$x^2 = 4a^2$$

Solve for x^1 by taking the positive and negative square root of the right side of the equal sign:

$$\begin{aligned} x &= \pm\sqrt{4a^2} \\ &= \pm 2a \\ x &= \pm 2a \end{aligned}$$

College Level Algebra

Answer the questions without using a calculator.

1. Add:

a. $\frac{1}{a+1} + \frac{1}{a}$

a. $\frac{2}{2a+1}$

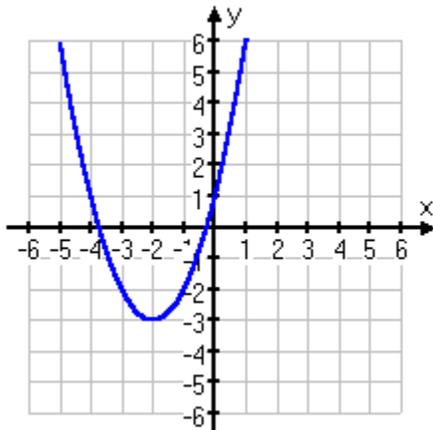
b. $\frac{2a+1}{a^2+a}$

c. $\frac{2}{3a}$

- d. $\frac{1}{a^2 + a}$
2. Find the Least Common Denominator of:
- $\frac{1}{x^2 + x}$, $\frac{1}{x^2 - 1}$ and $\frac{1}{x^3 - x}$
- $x^3 + 2x^2 - 1$
 - $x^7 - 1$
 - $(x^2 + x)(x^2 - 1)(x^3 - x)$
 - $x(x + 1)(x - 1)$

3. Simplify:
- $$\frac{a + \frac{1}{a}}{\frac{1}{a}}$$
- $a^2 + 1$
 - $a + 1$
 - a^2
 - 1

4. Find the equation of the given graph:



- $y = (x + 3)^2 - 2$
- $y = (x - 3)^2 + 2$
- $y = (x + 2)^2 - 3$
- $y = (x - 2)^2 + 3$

5. Find one of the solutions to the quadratic equation: $x^2 - 4x + 5 = 0$
- 4
 - -5
 - $2 + i$
 - $5 + i$

6. Given: $f(x) = 2x^2 - x + 1$

Find: $f(x^{1/2})$

- $x - \frac{1}{2}x + 1$
- $2fx^2 - fx + f$
- $\sqrt{x} + 1$
- $2x - \sqrt{x} + 1$

7. Given: $f(x) = 3x - 2$

Find: $f^{-1}(4)$

- 2
- 4
- 5
- 10

8. $\log_5 \frac{1}{5} = ?$

- 1
- -1
- 5
- -5

ANSWERS and SOLUTIONS: College Level Algebra

1. Answer: b
2. Answer: d
3. Answer: a
4. Answer: c
5. Answer: c
6. Answer: d
7. Answer: a
8. Answer: b

1. Find the LCD: $a(a + 1)$
Rewrite each term with the same LCD and add:

$$\begin{aligned} & \frac{1}{a+1} + \frac{1}{a} \\ &= \frac{a}{a} \cdot \frac{1}{a+1} + \frac{1}{a} \cdot \frac{a+1}{a+1} \\ &= \frac{a}{a(a+1)} + \frac{a+1}{a(a+1)} \\ &= \frac{a+a+1}{a(a+1)} \\ &= \frac{2a+1}{a(a+1)} \\ &= \frac{2a+1}{a^2+a} \end{aligned}$$

2. Find the Least Common Denominator of:

$$\frac{1}{x^2+x}, \frac{1}{x^2-1} \text{ and } \frac{1}{x^3-x}$$

Factor each denominator:

$$x^2+x = \underline{x}(x+1)$$

$$x^2-1 = (\underline{x+1})(\underline{x-1})$$

$$x^3-x = x(x^2-1) = \underline{x}(\underline{x+1})(\underline{x-1})$$

The LCD is the product of the underlined factors: $x(x+1)(x-1)$

3. Multiply the numerator and denominator by a and simplify:

$$\begin{aligned} \frac{a + \frac{1}{a}}{\frac{1}{a}} \cdot \frac{a}{a} &= \frac{\left(a + \frac{1}{a}\right)a}{\frac{1}{a} \cdot a} \\ &= \frac{a \cdot a + \frac{1}{a} \cdot a}{1} \\ &= a^2 + 1 \end{aligned}$$

4. The given graph is a graph of the parabola $y = x^2$ that has been translated to the left by **2** units and downward by **3** units.

A general equation for a parabola with its vertex at (h, k) is: $y = (x - h)^2 + k$

Equation is: $y = (x - (-2))^2 - 3$

Final answer: $y = (x + 2)^2 - 3$

5. Find one of the solutions to the quadratic equation: $x^2 - 4x + 5 = 0$
Use the quadratic formula to solve the quadratic equation

$$\begin{aligned} x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\ a &= 1, b = -4, c = 5 \\ x &= \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(5)}}{2(1)} \\ &= \frac{4 \pm \sqrt{16 - 20}}{2} \\ &= \frac{4 \pm \sqrt{-4}}{2} \\ &= \frac{4 \pm 2i}{2} \\ &= 2 \pm i \end{aligned}$$

From the choices given, the final answer is: $2 + i$

6. Given: $f(x) = 2x^2 - x + 1$
Find: $f(x^{1/2})$

$$\begin{aligned} f\left(x^{1/2}\right) &= 2\left(x^{1/2}\right)^2 - \left(x^{1/2}\right) + 1 \\ &= 2x - \sqrt{x} + 1 \end{aligned}$$

7. Given: $f(x) = 3x - 2$
Find: $f^{-1}(4)$

Method 1: Find the inverse function, $f^{-1}(x)$ and then evaluate $f^{-1}(4)$.

Method 2: The range of the original function is the domain of its inverse.

Therefore, find x when $f(x) = 4$:

$$4 = 3x - 2 \text{ and solve for } x.$$

$$x = 2$$

Final answer: $f^{-1}(4) = 2$ because $f(2) = 4$

$$\begin{aligned} \log_5 \frac{1}{5} &= \log_5 5^{-1} \\ &= -1 \cdot \log_5 5 \\ &= -1 \cdot 1 \\ &= -1 \end{aligned}$$

- 8.

ACCUPLACER®

Preparation & Sample Questions for English and Writing

To ensure that test scores accurately represent your skill levels, you may wish to review basic concepts in reading, grammar, arithmetic, trigonometry, and algebra before taking ACCUPLACER, especially if you have been away from school for more than a year. Many students find that SAT Preparation or SAT review books are helpful in refreshing their basic skills. These are available at local bookstores, public libraries, and online at the [SAT Preparation Center™](#).

Sentence Skills

In an ACCUPLACER® placement test, there are 20 Sentence Skills questions of two types.

- The first type is sentence correction questions that require an understanding of sentence structure. These questions ask you to choose the most appropriate word or phrase for the underlined portion of the sentence.
- The second type is construction shift questions. These questions ask that a sentence be rewritten according to the criteria shown while maintaining essentially the same meaning as the original sentence.

Within these two primary categories, the questions are also classified according to the skills being tested. Some questions deal with the logic of the sentence, others with whether or not the answer is a complete sentence, and still others with the relationship between coordination and subordination.

Sentence Skills Sample Questions

Directions for questions 1–5

Select the best version of the underlined part of the sentence. The first choice is the same as the original sentence. If you think the original sentence is best, choose the first answer.

1. Stamp collecting being a hobby that is sometimes used in the schools to teach economics and social studies.
 - A. being a hobby that is
 - B. is a hobby because it is
 - C. which is a hobby
 - D. is a hobby
2. Knocked sideways, the statue looked as if it would fall.
 - A. Knocked sideways, the statue looked
 - B. The statue was knocked sideways, looked
 - C. The statue looked knocked sideways
 - D. The statue, looking knocked sideways,
3. To walk, biking, and driving are Pat's favorite ways of getting around.
 - A. To walk, biking, and driving
 - B. Walking, biking, and driving
 - C. To walk, biking, and to drive
 - D. To walk, to bike, and also driving

4. When you cross the street in the middle of the block, this is an example of jaywalking.
- A. When you cross the street in the middle of the block, this
 - B. You cross the street in the middle of the block, this
 - C. Crossing the street in the middle of the block
 - D. The fact that you cross the street in the middle of the block
5. Walking by the corner the other day, a child, I noticed, was watching for the light to change.
- A. a child, I noticed, was watching
 - B. I noticed a child watching
 - C. a child was watching, I noticed,
 - D. there was, I noticed, a child watching

Directions for questions 6–10

Rewrite the sentence in your head following the directions given below. Keep in mind that your new sentence should be well written and should have essentially the same meaning as the original sentence.

6. It is easy to carry solid objects without spilling them, but the same cannot be said of liquids.

Rewrite, beginning with

Unlike liquids,

The next words will be

- A. it is easy to
 - B. we can easily
 - C. solid objects can easily be
 - D. solid objects are easy to be
7. Although the sandpiper is easily frightened by noise and light, it will bravely resist any force that threatens its nest.

Rewrite, beginning with

The sandpiper is easily frightened by noise and light,

The next words will be

- A. but it will bravely resist
 - B. nevertheless bravely resisting
 - C. and it will bravely resist
 - D. even if bravely resisting
8. If he had enough strength, Todd would move the boulder.

Rewrite, beginning with

Todd cannot move the boulder

The next words will be

- A. when lacking
- B. because he
- C. although there
- D. without enough

9. The band began to play, and then the real party started.

Rewrite, beginning with

The real party started

The next words will be

- A. after the band began
- B. and the band began
- C. although the band began
- D. the band beginning

10. Chris heard no unusual noises when he listened in the park.

Rewrite, beginning with

Listening in the park,

The next words will be

- A. no unusual noises could be heard
- B. then Chris heard no unusual noises
- C. and hearing no unusual noises
- D. Chris heard no unusual noises

Reading Comprehension

In an ACCUPLACER placement test, there are 20 questions of two primary types in Reading Comprehension.

- The first type of question consists of a reading passage followed by a question based on the text. Both short and long passages are provided. The reading passages can also be classified according to the kind of information processing required, including explicit statements related to the main idea, explicit statements related to a secondary idea, application, and inference.
- The second type of question, sentence relationships, presents two sentences followed by a question about the relationship between these two sentences. The question may ask, for example, if the statement in the second sentence supports that in the first, if it contradicts it, or if it repeats the same information.

Reading Comprehension Sample Questions

Read the statement or passage and then choose the best answer to the question. Answer the question based on what is stated or implied in the statement or passage.

1. In the words of Thomas DeQuincey, "It is notorious that the memory strengthens as you lay burdens upon it." If, like most people, you have trouble recalling the names of those you have just met, try this: The next time you are introduced, plan to remember the names. Say to yourself, "I'll listen carefully; I'll repeat each person's name to be sure I've got it, and I will remember." You'll discover how effective this technique is and probably recall those names for the rest of your life.

The main idea of the paragraph maintains that the memory

- A. always operates at peak efficiency.
- B. breaks down under great strain.
- C. improves if it is used often.
- D. becomes unreliable if it tires

2. Unemployment was the overriding fact of life when Franklin D. Roosevelt became president of the United States on March 4, 1933. An anomaly of the time was that the government did not systematically collect statistics of joblessness; actually it did not start doing so until 1940. The Bureau of Labor Statistics later estimated that 12,830,000 persons were out of work in 1933, about one-fourth of a civilian labor force of more than 51 million.

Roosevelt signed the Federal Emergency Relief Act on May 12, 1933. The president selected Harry L. Hopkins, who headed the New York relief program, to run FERA. A gifted administrator, Hopkins quickly put the program into high gear. He gathered a small staff in Washington and brought the state relief organizations into the FERA system. While the agency tried to provide all the necessities, food came first. City dwellers usually got an allowance for fuel, and rent for one month was provided in case of eviction.

This passage is primarily about

- A. unemployment in the 1930s.
 - B. the effect of unemployment on United States families.
 - C. President Franklin D. Roosevelt's presidency.
 - D. President Roosevelt's FERA program.
3. It is said that a smile is universally understood. And nothing triggers a smile more universally than a taste of sugar. Nearly everyone loves sugar. Infant studies indicate that humans are born with an innate love of sweets. Based on statistics, a lot of people in Great Britain must be smiling because on average, every man, woman, and child in that country consumes 95 pounds of sugar each year.

From this passage it seems safe to conclude that the English

- A. do not know that too much sugar is unhealthy.
 - B. eat desserts at every meal.
 - C. are fonder of sweets than most people.
 - D. have more cavities than any other people.
4. With varying success, many women around the world today struggle for equal rights. Historically, women have achieved greater equality with men during periods of social adversity. The following factors initiated the greatest number of improvements for women: violent revolution, world war, and the rigors of pioneering in an undeveloped land. In all three cases, the essential element that improved the status of women was a shortage of men, which required women to perform many of society's vital tasks.

We can conclude from the information in this passage that

- A. women today are highly successful in winning equal rights.
- B. only pioneer women have been considered equal to men.
- C. historically, women have only achieved equality through force.
- D. historically, the principle of equality alone has not been enough to secure women equal rights.

5. In 1848, Charles Burton of New York City made the first baby carriage, but people strongly objected to the vehicles because they said the carriage operators hit too many pedestrians. Still convinced that he had a good idea, Burton opened a factory in England. He obtained orders for the baby carriages from Queen Isabella II of Spain, Queen Victoria of England, and the Pasha of Egypt. The United States had to wait another 10 years before it got a carriage factory, and only 75 carriages were sold in the first year.

Even after the success of baby carriages in England,

- A. Charles Burton was a poor man.
 - B. Americans were still reluctant to buy baby carriages.
 - C. Americans purchased thousands of baby carriages.
 - D. the United States bought more carriages than any other country.
6. All water molecules form six-sided structures as they freeze and become snow crystals. The shape of the crystal is determined by temperature, vapor, and wind conditions in the upper atmosphere. Snow crystals are always symmetrical because these conditions affect all six sides simultaneously.

The purpose of the passage is to present

- A. a personal observation.
- B. a solution to a problem.
- C. actual information.
- D. opposing scientific theories.

Directions for questions 7–10

For the questions that follow, two underlined sentences are followed by a question or statement. Read the sentences, then choose the best answer to the question or the best completion of the statement.

7. The Midwest is experiencing its worst drought in 15 years.

Corn and soybean prices are expected to be very high this year.

What does the second sentence do?

- A. It restates the idea found in the first.
- B. It states an effect.
- C. It gives an example.
- D. It analyzes the statement made in the first.

8. Social studies classes focus on the complexity of our social environment.

The subject combines the study of history and the social sciences and promotes skills in citizenship.

What does the second sentence do?

- A. It expands on the first sentence.
- B. It makes a contrast.
- C. It proposes a solution.
- D. It states an effect

9. Knowledge of another language fosters greater awareness of cultural diversity among the peoples of the world.

Individuals who have foreign language skills can appreciate more readily other peoples' values and ways of life.

How are the two sentences related?

- A. They contradict each other.
- B. They present problems and solutions.
- C. They establish a contrast.
- D. They repeat the same idea.

10. Serving on a jury is an important obligation of citizenship.

Many companies allow their employees paid leaves of absence to serve on juries.

What does the second sentence do?

- A. It reinforces what is stated in the first.
- B. It explains what is stated in the first.
- C. It expands on the first.
- D. It draws a conclusion about what is stated in the first.

WritePlacer[®]

This test measures your ability to write effectively, which is critical to academic success.

Your writing sample will be scored on the basis of how effectively it communicates a whole message to the readers for the stated purpose. Your score will be based on your ability to express, organize, and support your opinions and ideas, not the position you take on the essay topic. The following five characteristics of writing will be considered:

- Focus—The clarity with which you maintain your main idea or point of view
- Organization—The clarity with which you structure your response and present a logical sequence of ideas
- Development and Support—The extent to which you elaborate on your ideas and the extent to which you present supporting details
- Sentence Structure—The effectiveness of your sentence structure
- Mechanical Conventions—The extent to which your writing is free of errors in usage and mechanics

WritePlacer Sample Topic

Prepare a multiple-paragraph writing sample of about 300–600 words on the topic below. You should use the time available to plan, write, review, and edit what you have written. Read the assignment carefully before you begin to write.

Some schools require each student to participate in an organized school sport chosen by the student. People at these schools argue that athletics is an important part of the educational experience and that there should be a rule requiring participation. Others argue that students should be free to decide whether or not they wish to participate in organized school sports. Write an essay for a classroom instructor in which you take a position on whether participation in organized school athletics should be required. Be sure to defend your position with logical arguments and appropriate examples. Your essay must be 300–600 words in length.

We have provided the ACCUPLACER test resources and the tools.

The rest is up to you.

May all of your preparation bring you success.