

## Arithmetic Sample Questions

Solve the following problems and select your answer from the choices given. You may use the paper you have been given for scratch paper.

- $2.75 + .003 + .158 =$ 
  - 4.36
  - 2.911
  - 0.436
  - 2.938
- $7.86 \times 4.6 =$ 
  - 36.156
  - 36.216
  - 351.56
  - 361.56
- $\frac{7}{20} =$ 
  - 0.035
  - 0.858
  - 0.35
  - 3.5
- Which of the following is the least?
  - 0.105
  - 0.501
  - 0.015
  - 0.15
- All of the following are ways to write 25 percent of N EXCEPT
  - 0.25 N
  - $\frac{25N}{100}$
  - $\frac{1}{4} N$
  - 25 N
- Which of the following is closest to  $27.8 \times 9.6$ ?
  - 280
  - 300
  - 2,800
  - 3,000
- A soccer team played 160 games and won 65 percent of them. How many games did it win?
  - 94
  - 104
  - 114
  - 124
- Three people who work full-time are to work together on a project, but their total time on the project is to be equivalent to that of only one person working full-time. If one of the people is budgeted for one-half of his time to the project and a second person for one-third of her time, what part of the third worker's time should be budgeted to this project?
  - $\frac{1}{3}$
  - $\frac{3}{5}$
  - $\frac{1}{6}$
  - $\frac{1}{8}$
- 32 is 40 percent of what number?
  - 12.8
  - 128
  - 80
  - 800
- $3\frac{1}{3} - 2\frac{2}{5} =$ 
  - $1\frac{1}{2}$
  - $\frac{1}{15}$
  - $\frac{14}{15}$
  - $1\frac{1}{15}$

## Elementary Algebra

A total of 12 questions of three types 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.
- The 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 translating written phrases into algebraic expressions and solving equations, inequalities, word problems, linear equations and inequalities, quadratic equations (by factoring), and verbal problems presented in an algebraic context.

# Elementary Algebra

## Sample Questions

Solve the following problems and select your answer from the choices given. You may use the paper you have been given for scratch paper.

1. If A represents the number of apples purchased at 15 cents each, and B represents the number of bananas purchased at 10 cents each, which of the following represents the total value of the purchases in cents?

A.  $A + B$   
B.  $25(A + B)$   
C.  $10A + 15B$   
D.  $15A + 10B$

2.  $\sqrt{2} \times \sqrt{15} = ?$

A. 17  
B. 30  
C.  $\sqrt{30}$   
D.  $\sqrt{17}$

3. What is the value of the expression  $2x^2 + 3xy - 4y^2$  when  $x = 2$  and  $y = -4$ ?

A. -80  
B. 80  
C. -32  
D. 32

4. In the figure below, both circles have the same center, and the radius of the larger circle is  $R$ . If the radius of the smaller circle is 3 units less than  $R$ , which of the following represents the area of the shaded region?



A.  $\pi R^2$   
B.  $\pi(R - 3)^2$   
C.  $\pi R^2 - \pi \times 3^2$   
D.  $\pi R^2 - \pi(R - 3)^2$

5.  $(3x - 2y)^2 =$

A.  $9x^2 - 4y^2$   
B.  $9x^2 + 4y^2$   
C.  $9x^2 + 4y^2 - 6xy$   
D.  $9x^2 + 4y^2 - 12xy$

6. If  $x > 2$ , then  $\frac{x^2 - x - 6}{x^2 - 4} =$

A.  $\frac{x - 3}{2}$   
B.  $\frac{x - 3}{x - 2}$   
C.  $\frac{x - 3}{x + 2}$   
D.  $\frac{3}{2}$

7.  $\frac{4 - (-6)}{-5} =$

A.  $\frac{2}{5}$   
B.  $-\frac{2}{5}$   
C. 2  
D. -2

8. If  $2x - 3(x + 4) = -5$ , then  $x =$

A. 7  
B. -7  
C. 17  
D. -17

9.  $-3(5 - 6) - 4(2 - 3) =$

A. -7  
B. 7  
C. -1  
D. 1

10. Which of the following expressions is equivalent to  $20 - \frac{4}{5}x \geq 16$ ?

A.  $x \leq 5$   
B.  $x \geq 5$   
C.  $x \geq 32\frac{1}{2}$   
D.  $x \leq 32\frac{1}{2}$

# College-Level Mathematics Test

The College-Level Mathematics test measures your ability to solve problems that involve college-level mathematics concepts. There are six content areas measured on this test: (a) Algebraic Operations, (b) Solutions of Equations and Inequalities, (c) Coordinate Geometry, (d) Applications and other Algebra Topics, (e) Functions, and (f) Trigonometry. The Algebraic Operations content area includes the simplification of rational algebraic expressions, factoring and expanding polynomials, and manipulating roots and exponents. The Solutions of Equations and Inequalities content area includes the solution of linear and quadratic equations and inequalities, systems of equations, and other algebraic equations. The Coordinate Geometry content area presents questions involving plane geometry, the coordinate plane, straight lines, conics, sets of points in the plane, and graphs of algebraic functions. The Functions content area includes questions involving polynomial, algebraic, exponential, and logarithmic functions. The Trigonometry content area includes trigonometric functions. The Applications and other Algebra Topics content area contains complex numbers, series and sequences, determinants, permutations and combinations, factorials, and word problems. A total of 20 questions are administered on this test.

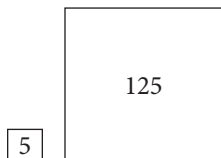
## Sample Questions

Solve the problem. Use the paper you were given for scratchwork.

1.  $2^{\frac{5}{2}} - 2^{\frac{3}{2}}$
- A.  $2^{\frac{1}{2}}$
  - B. 2
  - C.  $2^{\frac{3}{2}}$
  - D.  $2^{\frac{5}{3}}$
  - E.  $2^2$

2. If  $a \neq b$  and  $\frac{1}{x} + \frac{1}{a} = \frac{1}{b}$ , then  $x =$
- A.  $\frac{1}{b} - \frac{1}{a}$
  - B.  $b - a$
  - C.  $\frac{1}{ab}$
  - D.  $\frac{a-b}{ab}$
  - E.  $\frac{ab}{a-b}$
3. If  $3x^2 - 2x + 7 = 0$ , then  $(x - \frac{1}{3})^2 =$
- A.  $\frac{20}{9}$
  - B.  $\frac{7}{9}$
  - C.  $-\frac{7}{9}$
  - D.  $-\frac{8}{9}$
  - E.  $-\frac{20}{9}$
4. The graph of which of the following equations is a straight line parallel to the graph of  $y = 2x$ ?
- A.  $4x - y = 4$
  - B.  $2x - 2y = 2$
  - C.  $2x - y = 4$
  - D.  $2x + y = 2$
  - E.  $x - 2y = 4$
5. An equation of the line that contains the origin and the point (1, 2) is
- A.  $y = 2x$
  - B.  $2y = x$
  - C.  $y = x - 1$
  - D.  $y = 2x + 1$
  - E.  $\frac{y}{2} = x - 1$
6. An apartment building contains 12 units consisting of one- and two-bedroom apartments that rent for \$360 and \$450 per month, respectively. When all units are rented, the total monthly rental is \$4,950. What is the number of two-bedroom apartments?
- A. 3
  - B. 4
  - C. 5
  - D. 6
  - E. 7

7. If the two square regions in the figures below have the respective areas indicated in square yards, how many yards of fencing are needed to enclose the two regions?



- A.  $4\sqrt{130}$   
 B.  $20\sqrt{10}$   
 C.  $24\sqrt{5}$   
 D. 100  
 E.  $104\sqrt{5}$
8. If  $\log_{10} x = 3$ , then  $x =$   
 A.  $3^{10}$   
 B. 1,000  
 C. 30  
 D.  $\frac{10}{3}$   
 E.  $\frac{3}{10}$
9. If  $f(x) = 2x + 1$  and  $g(x) = \frac{x-1}{2}$ , then  $f(g(x)) =$   
 A.  $x$   
 B.  $\frac{x-1}{4x+2}$   
 C.  $\frac{4x+2}{x-1}$   
 D.  $\frac{5x+1}{2}$   
 E.  $\frac{(2x+1)(x-1)}{2}$
10. If  $\theta$  is an acute angle and  $\sin \theta = \frac{1}{2}$ , then  $\cos \theta =$   
 A. -1  
 B. 0  
 C.  $\frac{1}{2}$   
 D.  $\frac{\sqrt{3}}{2}$   
 E. 2

## ACCUPLACER ESL Reading Skills Test

The ESL Reading Skills test measures your ability to read English. Specifically, it assesses your comprehension of short passages. It contains brief passages of 50 words or less and moderate length passages of 50 to 90 words. Half of this test contains straightforward comprehension items (paraphrase, locating information, vocabulary on a phrase level, and pronoun reference). The other half assesses inference skills (main idea, fact versus opinion, cause/effect logic, identifying irrelevant information, author's point of view, and applying the author's logic to another situation).

### Sample Questions

1. Television has been introduced to almost every country in the world, reaching a large number of viewers on every continent. About 600 million people saw the first person walk on the moon, and a billion people watched the twentieth Olympic Games. Television has in many ways promoted understanding and cooperation among people. It does this by showing educational and cultural programs.

According to the passage, which of the following is true?

- A. Television is watched in nearly every country.  
 B. Not everybody who had a television set could watch the 1998 World Cup finals.  
 C. Watching television makes people dissatisfied with their own lives.  
 D. Television was invented in 1980.

2. Janet's parents bought her a new sports car as a birthday present. It was blue. Janet sold her 7-year-old blue pickup truck to a high school student. The truck could not go very fast, but the student was happy with it.

According to the passage, which of these statements is true?

- A. Janet bought a pickup truck and a sports car.  
 B. The pickup truck was faster than the sports car.  
 C. The high school student traded cars with Janet.  
 D. The pickup truck was older than the sports car.

# Answer Key

SENTENCE SKILLS	
QUESTION NUMBER	CORRECT ANSWER
1	D
2	A
3	B
4	C
5	B
6	C
7	A
8	B
9	A
10	D

ARITHMETIC	
QUESTION NUMBER	CORRECT ANSWER
1	B
2	A
3	C
4	C
5	D
6	A
7	B
8	C
9	C
10	C

READING COMPREHENSION	
QUESTION NUMBER	CORRECT ANSWER
1	C
2	D
3	C
4	D
5	B
6	C
7	B
8	A
9	D
10	A

ELEMENTARY ALGEBRA	
QUESTION NUMBER	CORRECT ANSWER
1	D
2	C
3	A
4	D
5	D
6	B
7	D
8	B
9	B
10	A

# Answer Key

CLM	
QUESTION NUMBER	CORRECT ANSWER
1	C
2	E
3	E
4	C
5	A
6	E
7	C
8	B
9	A
10	D

ESL SENTENCE MEANING	
QUESTION NUMBER	CORRECT ANSWER
1	D
2	A
3	A
4	A
5	D
6	D
7	B
8	C
9	D
10	A

ESL READING SKILLS	
QUESTION NUMBER	CORRECT ANSWER
1	A
2	D
3	B
4	A
5	D
6	A
7	B
8	A
9	A
10	D

ESL LANGUAGE USE	
QUESTION NUMBER	CORRECT ANSWER
1	A
2	A
3	D
4	D
5	B
6	D
7	C
8	B
9	C
10	B