SWC
SOUTHWESTERN COLLEGE

02/2010

MDTP ELEMENTARY ALGEBRA TEST
Practice Test & Guide

What is the Elementary Algebra Test?

- The Elementary Algebra Test is an assessment instrument approved for use in the placement of community college students into math courses up to intermediate algebra.
- The Elementary Algebra Test was developed by the University of California and California State University through the California Mathematics Diagnostic Testing Project (MDTP).
- The Elementary Algebra Test is designed to measure students' ability to enter:
  - **MATH 60 - INTERMEDIATE ALGEBRA I**
  - **MATH 70 - INTERMEDIATE ALGEBRA II**
  - **MATH 100 - MATHEMATICS FOR GENERAL EDUCATION**
  - **MATH 110 - MATH FOR ELEMENTARY SCHOOL TEACHERS I**
  - **MATH 112 - CHILDREN'S MATHEMATICAL THINKING**
  - **MATH 118 - FINITE MATHEMATICS**
  - **CHEM 100 - INTRODUCTION TO GENERAL CHEMISTRY**
  - **PSYC/SOC 270 - STATISTICAL METHODS**

How do I know if I should take the Elementary Algebra Test?

You should take the Elementary Algebra Test if:

- you had 2 or more years of high school algebra or the equivalent ***and***
- you received a grade of "C" or better in your last math course ***and***
- you completed your last math course within the last two years.

You should consider taking the Algebra Readiness Test if any of the following apply:

- You had no high school algebra.
- You had one year of high school algebra or the equivalent.
- It has been several years since your last math class.

How long is the Elementary Algebra Test?

The Elementary Algebra Test consists of 50 multiple-choice problems that must be completed within 45 minutes.

Skills Assessed and Sample Questions

Skills measured on the Algebra Readiness Test are:

- Arithmetic Operations
- Polynomials
- Linear Equations and Inequalities
- Quadratic Equations
- Graphing
- Rational Expressions
- Exponents and Square Roots
- Geometry
- Word Problems

Arithmetic Operations – sample questions:

1. $\frac{4}{15} \times \frac{3}{8} =$

   A. $\frac{1}{6}$ B. $\frac{4}{5}$ C. $\frac{1}{5}$ D. $\frac{1}{10}$ E. $\frac{3}{10}$

2. $7.03 - (3 - 1.2) =$

   A. 4.1 B. 5.23 C. 2.83 D. 5.5 E. 5.1

Polynomials – sample questions:

3. $(x^2 + 5x + 4) - (2x^2 - 3x + 6) =$

   A. $3x^2 + 2x - 2$ B. $-3x^2 + 2x + 10$ C. $-x^2 + 8x - 2$
   D. $-x^2 + 2x + 10$ E. $x^2 + 8x - 2$

4. $(x - 4)(x - 3) =$

   A. $2x^2 + 12x + 12$ B. $x^2 + x + 7$ C. $x^2 + 7x - 12$
   D. $x^2 + 12x + 12$ E. $x^2 - 7x + 12$

5. If $x = -4$ and $y = 2$, then $x^2 + y^2 =$

   A. 14 B. 20 C. 18 D. 12 E. 16

Linear Equations & Inequalities – sample questions:

6. If $y = x - 8$ and $2x - y = 4$, then $x =$

   A. 4 B. 0 C. 2 D. -2 E. -4

7. $4x - 7 > 9x + 13$ is equivalent to

   A. $6 > 5x$ B. $-20 > 13x$ C. $4 > x$ D. $x > -4$ E. $x < -4$

Quadratic Equations – sample questions:

8. One of the solutions of the equation $(x + 4)(2x - 5) = 0$ is

A. 4 B. 0 C. $-\frac{5}{2}$ D. $\frac{5}{2}$ E. $\frac{2}{5}$

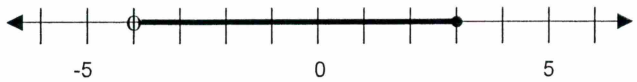
9. One of the solutions of the equation $x^2 + 4x = 12$ is

A. 3 B. -2 C. 2 D. -3 E. 6

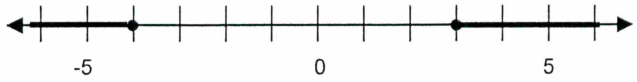
Graphing – sample questions:

10. Which of the following graphs represents all values of x such that $x > -4$ and $x \leq 3$?

A.



B.



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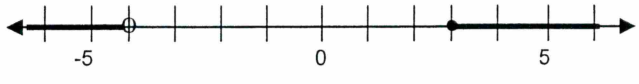

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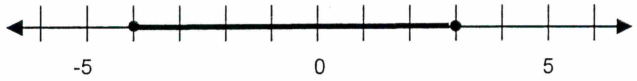
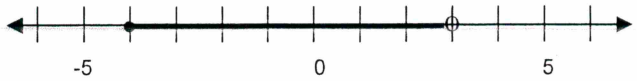
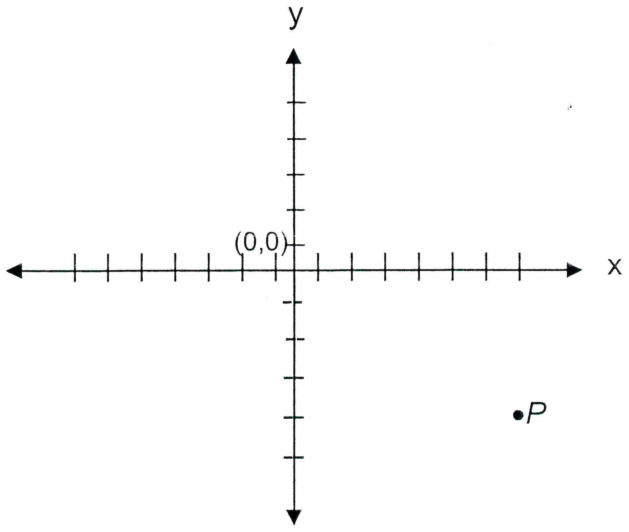


E.



11. What are the coordinates of point P, shown in the figure below?



A. (7, 4) B. (-7, 4) C. (4, -7) D. (7, -4) E. (-7, -4)

Rational Expressions – sample questions:

12. $\dfrac{4(x^2-4)}{x-2} =$

A. 4 B. $4x^2+8$ C. $4x+8$ D. $4x-8$ E. $4x^2+16$

13. $\dfrac{3x-7}{x+2} - \dfrac{5}{x^2-4} =$

A. $\dfrac{3x^2-13x+9}{x^2-4}$ B. $\dfrac{-3x^2+x-19}{x^2-4}$ C. $\dfrac{3x-2}{x+2}$

D. $\dfrac{-3x-12}{x+2}$ E. $\dfrac{3x^2-x+9}{x+2}$

Exponents & Square Roots – sample questions:

14. $3^4 \cdot 3^5 =$

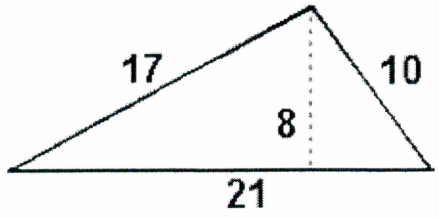
A. 3^{20} B. 9^{20} C. 9^9 D. 3^9 E. 6^9

15. $\sqrt{63} =$

A. $3\sqrt{7}$ B. 7 C. 21 D. $7\sqrt{3}$ E. $9\sqrt{7}$

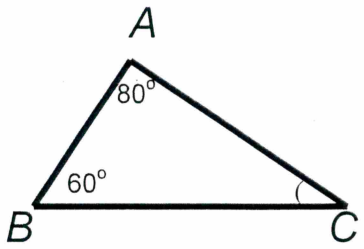
Geometry – sample questions:

16. What is the area A and perimeter P of the triangle below?



A. $A = 210$, $P = 46$ B. $A = 105$, $P = 35$ C. $A = 168$, $P = 46$ D. $A = 84$, $P = 48$ E. $A = 168$, $P = 48$

17. In the triangle below, what is the degree measure of $\angle C$?



A. 40° B. 50° C. 60° D. 10° E. 220°

Word Problems – sample questions:

18. What is the approximate area of a circle whose radius is 8?

A. 25 B. 50 C. 200 D. 16 E. 64

19. What percent of 33 is 44?

A. 33 B. 60 C. 75 D. 133 E. 80

20. 100 is the square of twice what number?

A. 10 B. 4 C. 50 D. 5 E. 20

Answers:

Arithmetic Operations	(1) D (2) B
Polynomials	(3) C (4) E (5) B
Linear Equations & Inequalities	(6) E (7) E
Quadratic Equations	(8) D (9) C
Graphing	(10) A (11) D
Rational Expressions	(12) C (13) A
Exponents & Square Roots	(14) D (15) A
Geometry	(16) D (17) A
Word Problems	(18) C (19) D (20) D