

SKILLS LIST and SAMPLE TEST ITEMS

FOR

PRACTICE TEST FOR MATHEMATICS, ALGEBRA I

(Test items developed for skills measured in VIRGINIA EOC)

Skills

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|--------------------------------|-------------------------------------|
| 1.0 Expressions and Operations | 3.0 Equations and Inequalities |
| 1.1 Expressions | 3.1 Linear Equations/Inequalities |
| 1.2 Exponents | 3.2 Justification |
| 1.3 Polynomials | 3.3 Graphing |
| 1.4 Factoring | 3.4 Slope |
| 1.5 Square Root | 3.5 Equation of a Line |
| 2.0 Relations and Functions | 3.6 Systems of Two Linear Equations |
| 2.1 Analyze Data | 3.7 Quadratic Equations |
| 2.2 Functions | 4.0 Statistics |
| 2.3 Direct Variation | 4.1 Matrices |
| | 4.2 Line of Best Fit |
| | 4.3 One-Variable Data Sets |
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Number of questions: 50
Number of pages in test: 10

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VIRGINIA ALGEBRA I EOC PRACTICE TEST

DIRECTIONS: Read each question. Then mark your choice on the answer sheet.

1. Find the sum of the following polynomials:

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

- A. $x^3 + x^2 + x$
- B. $x^5 + x^2$
- C. $x^5 + 2x^2$
- D. $x^3 + 2x^2$

2. Find the difference:

$$(x^2 + 3x + 10) - (x^2 - x + 1)$$

- A. $x^2 + 2x + 9$
- B. $x^2 + 4x + 9$
- C. $4x + 9$
- D. $-2x^2 - 2x$

3. Factor the following binomial in simplest form:

$$4x^2 - 25$$

- A. $4(x - 6)$
- B. $(2x + 5)(2x - 5)$
- C. $(2x + 5)(2x + 5)$
- D. $(2x - 5)(2x - 5)$

4. Factor the following:

$$6x^2 + 5x - 6$$

- A. $(2x + 3)(3x - 2)$
- B. $(2x - 3)(3x + 2)$
- C. $(2x + 2)(3x + 3)$
- D. $(6x + 6)(x - 1)$

5. Simplify the following:

$$\sqrt{75}$$

- A. $3\sqrt{5}$
- B. $5\sqrt{3}$
- C. $2\sqrt{15}$
- D. 25

6. Given the following relation, what is the domain of the set?

$$(1,2), (1,3), (1,4), (1,5)$$

- A. $\{1\}$
- B. $\{2,3,4,5\}$
- C. all real numbers
- D. $\{\frac{x}{x} < 5\}$

7. The following is a table of a relation. What is the domain of the relation?

x	y
0	1
1	2
2	5
3	10
4	17
5	26
6	37

- A. $\{0,1,2,3,4,5,6\}$
- B. all real numbers
- C. $\{1,2,5,10,17,26,37\}$
- D. none of the above