

Elementary Algebra

The Elementary Algebra version of the placement test has 12 questions and tests you in the following areas. Your results on this section of the test will determine your placement into MATH 061 or MATH 067.

- Operations with integers and rational numbers; computations with absolute value; ordering. These problems quiz you on the various minimal skill levels of algebra. Somewhere between 8-17% of the Elementary Algebra test contains problems in this category.

- Operations with algebraic expressions; minimal skill levels using evaluation of simple formulas and expressions; addition, subtraction, multiplication and division of monomials and polynomials; evaluation of positive rational roots and exponents; simplifying algebraic fractions and factoring. Somewhere between 42-67% of the Elementary Algebra test contains problems in this category.

- Solutions of equations, inequalities and word problems; solving of equations by factoring; solving word problems presented in an algebraic context including geometric reasoning and graphing; translation of written phrases into algebraic expression. This category of problems constitutes 17-50% of the test depending on how proficient the student is in the first two categories.

The following problems are merely suggested practice problems for the Elementary Algebra section of the placement test. Some of them may or may not be similar to the problems on the actual test. It is recommended that if you have difficulty completing the problems that you review skills developed in a first and second year high school algebra class.

To be well prepared for the actual adaptive test, it is recommended that you thoroughly review arithmetic, Algebra I, Algebra II, College Algebra and Trigonometry topics. The attached problems are merely suggested for practice and do not necessarily reflect the problems actually on the test.

Elementary Algebra Practice Test

1. Which is greater than -4? a.) 5 b.) -5 c.) $-\frac{1}{2}$ d.) -25
2. Which is the smallest? a.) -1 b.) $-\frac{1}{2}$ c.) 0 d.) 3
3. Combine terms $12a + 26b - 4b - 16a$
4. Simplify $(4 - 5) - (13 - 18 + 2)$
5. What is $|-26|$?
6. Multiply $(x - 4)(x + 5)$
7. Factor $5x^2 - 15x - 20$
8. Factor $3y(x - 3) - 2(x - 3)$
9. Factor $9x^2 + 15x - 14$
10. Solve for x :
 $2x - y = \frac{3}{4}x + 6$
11. Subtract and simplify

$$\left(\frac{2}{x+1}\right) - \left(\frac{3}{x-3}\right)$$

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12. Multiply and simplify: $\left(\frac{4x^3}{2y}\right)\left(\frac{10y^2}{36x}\right)$
13. Simplify: $(6x^3y^5)^2$
14. Simplify $\frac{2x}{3} - \frac{3x}{5} + \frac{x}{2}$
15. Solve for x : $\frac{-5x}{7} = -\frac{10}{21}$
16. Simplify: $\frac{24s}{3s}$
17. Solve for x : $\frac{2x}{5} = 12 - \frac{3x}{2}$
18. In which quadrant is the point $(-3, 4)$?
19. Six less than five times a number is subtracted from three times the number. If the result is 12, find the number.
20. The length of a rectangle is 3 cm longer than twice the width. The area of the rectangle is 90 sq cm. Find the length and the width of the rectangle.

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Elementary Algebra Practice Test Answers

1. a.) 5 c.) $-\frac{1}{2}$

2. a.) -1

3. $-4a + 22b$

4. 2

5. 26

6. $x^2 + x - 20$

7. $5(x + 1)(x - 4)$

8. $(x-3)(3y-2)$

9. $(3x-2)(3x+7)$

10. $x = \left(\frac{4}{5}\right)(y + 6)$

11. $\frac{-(x+9)}{(x+1)(x-3)}$

12. $\frac{5x^2y}{9}$

13. $36x^6y^{10}$

14. $\frac{17x}{30}$

15. $x = \frac{2}{3}$

16. 8

17. $\frac{120}{19}$

18. 11

19. -3

20. 15 cm by 6 cm

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