SAMPLE MATHEMATICS PLACEMENT TEST
BASIC ALGEBRA

The items on this sample test are similar to the items on the Mathematics Placement Test in level of difficulty. However, not all of the topics or types of items that are on the Placement Test are included here. The Mathematics Placement Test has twenty-five, multiple-choice questions. This sample test has only fourteen questions and they are all open-ended.

TOPICS ON THE MATHEMATICS PLACEMENT TEST: arithmetic of rational numbers, order of operations, operations with algebraic expressions, linear equations and inequalities, factoring and algebraic fractions, exponents and radicals, graphing, fractional and quadratic equations, absolute values, systems of linear equations. Items do not require the use of a calculator.

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1. Remove parentheses and simplify the expression $\left(xy^3\right)^2$.

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2. Remove parentheses and simplify the expression $\sqrt{3}\left(\sqrt{3}+2\right)$.

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3. Solve the equation $\frac{x-3}{8}-\frac{7}{4}=\frac{5}{8}$.

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4. Solve the equation $x^2+2x=3$.

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5. Remove parentheses and simplify the expression $\left(2x^2y^3\right)\left(-3xy^2\right)$.

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6. Find the x-intercept of the graph $2x+3y+12=0$.

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7. Remove parentheses and simplify the expression $\left(\frac{x^2-4}{2x}\right)\left(\frac{6}{3x-6}\right)$.

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8. Simplify the expression $\frac{x+\frac{3}{y}}{y+3}$.

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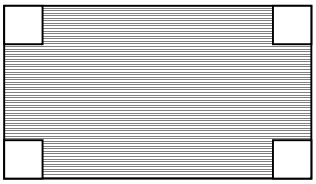
9. If $x = 3$ and $y = -5$, then find the value of the expression $xy - \frac{6y}{x}$.

10. Solve the equation $5y - 2 = 2x + 3$ for y.

11. Find the slope and the y-intercept of the line $3x - 5y - 9 = 0$.

12. In a calculus class, 15 of the students play soccer. Find the total number of students in the class if 3 out of every 5 play soccer.

13. In the figure below, the large rectangle has dimensions 6 inches by 9 inches. The squares on each corner are 2 inches by 2 inches. Find the area in square inches of the shaded region.



14. Express $\sqrt{50x^4y^{10}}$ in simplest radical form.