

## **MATH 0980 OBJECTIVES**

After successful completion of MAT 0980, a student should be able to:

1. Round a whole number to a given place value.
2. Add and subtract like measurements.
3. Recognize and use the commutative and associative properties of addition and multiplication.
4. Use the problem-solving strategy to solve word problems.
5. Multiply exponential numbers and expressions using the product rule of exponents.
6. Convert a measurement into an equivalent measurement in different units.
7. Calculate the area of a rectangle.
8. Divide an algebraic expression by a whole number.
9. Evaluate or simplify expressions following the order of operations.
10. Evaluate algebraic expressions.
11. Calculate the arithmetic mean.
12. Use the properties of equality to find the solution of an equation.
13. Solve equations that must be simplified before using the properties of equality.
14. Identify the opposite of an integer.
15. Add, subtract, multiply, and divide integers.
16. Simplify and evaluate expressions by adding, subtracting, multiplying, and dividing integers.
17. Solve equations and word problems that include addition, subtraction, multiplication, and division of integers.
18. Simplify expressions with integers following the order of operations.
19. Add or subtract polynomials by combining like terms.
20. Write the prime factorization of a composite number.
21. Simplify a fraction to an equivalent fraction in lowest terms.

22. Add, subtract, multiply, and divide fractions.
23. Simplify expressions that include addition, subtraction, multiplication, and division of fractions.
24. Solve equations and word problems that include addition, subtraction, multiplication, and division of fractions.
25. Identify the place values for decimal numbers.
26. Convert from decimals to fractions or mixed numbers.
27. Compare decimal numbers using the inequality symbols.
28. Round a decimal number to a specific place value.
29. Add, subtract, multiply, and divide decimal numbers.
30. Estimate the sum, difference, product, and quotient of decimal numbers.
31. Simplify expressions with decimal numbers.
32. Solve equations that include decimals.
33. Write numbers in scientific notation.
34. Convert from scientific notation to place value notation.
35. Convert measurements using unit analysis.
36. Use formulas to calculate and solve problems.
37. Evaluate formulas that include square roots.
38. Write a ratio or a rate as a fraction.
39. Use proportions to solve problems involving rates or ratios.
40. Convert from percents to decimals and fractions.
41. Calculate percent increases and percent decreases.
42. Solve word problems using percent.
43. Determine if an ordered pair is a solution of an equation.
44. Complete an ordered pair so that it is a solution of an equation.
45. Graph ordered pairs and graph an equation.

46. Use the  $x$ -intercepts and  $y$ -intercepts to graph an equation.
47. Recognize different interpretations of slope.
48. Given two points, calculate the slope.
49. Plot points on the real number line.
50. Find the absolute value of a real number.
51. Evaluate an expression using the order of operations.
52. Evaluate an expression after replacing the variables with real values
53. Solve a linear equation.
54. Solve application problems by using a linear equation.
55. Solve geometric problems by using a linear equation.
56. Solve linear equations involving fractions and decimals.
57. Solve application problems involving principal and interest.
58. Solve application problems involving distance, rate, and time.
59. Solve application problems involving ratio and proportion.
60. Solve linear inequalities.
61. Graph a linear equation in two variables.
62. Apply the properties of exponents to simplify an expression.
63. Evaluate expressions with scientific notation.
64. Add polynomials.
65. Subtract polynomial.
66. Multiply polynomials.
67. Divide a polynomial by a monomial.
68. Divide a polynomial by a polynomial of two or more terms.
69. Solve an application problem using polynomials.
70. Graph nonlinear equations in two variables.
71. Factor by factoring out the greatest common factor.

72. Factor by grouping.
73. Factor trinomials with leading coefficient 1.
74. Factor trinomials with leading coefficient other than 1.
75. Factor a perfect square trinomial.
76. Factor the difference of two squares.
77. Factor the sum of two cubes.
78. Factor the difference of two cubes.
79. Solve a quadratic equation by factoring.
80. Solve a higher degree polynomial equation by factoring.
81. Graph a polynomial equation using intercepts.
82. Find the domain of a rational expression.
83. Reduce a rational expression.
84. Multiply rational expressions.
85. Divide rational expressions.
86. Find the least common denominator of two rational expressions.
87. Add or subtract rational expressions with same denominators.
88. Add or subtract rational expressions with different denominators.
89. Simplify complex fractions.
90. Solve rational equations.
91. Solve an application problem involving rational equations.
92. Given two points, find the slope of the line containing them.
93. Given the equation of a line, find the slope and y-intercept.
94. Find the equation of a line, given a point and a slope.
95. Find the equation of a line, given two points.
96. Write the equation of a line parallel or perpendicular to another line.

97. Interpret an application problem involving a linear equation in two variables.
98. Solve a system of equations using the substitution method.
99. Solve a system of equations using the addition method.
100. Identify an inconsistent system of equations.
101. Identify a dependent system of equations.
102. Solve an application problem using the solution to a system of equations.
103. Graph a system of equations and identify independent, dependent, consistent, and inconsistent equations.
104. Graph a linear inequality in two variables.
105. Graph a system of linear inequalities in two variables.
106. Find the principal square root of a nonnegative real number.
107. Find the  $n$ th root of a variable expression.
108. Simplify a radical expression.
109. Add and subtract radical expressions.
110. Multiply radical expressions with one term.
111. Multiply radical expressions with multiple terms.
112. Multiply conjugate radical expressions.
113. Rationalize the denominator containing one term in a radical expression.
114. Rationalize the denominator containing two terms in a radical expression.
115. Solve radical equations.
116. Convert radical expressions to expressions with rational exponents.
117. Find the domain and range of a relation.
118. Using the Vertical Line Test, determine whether a relation is a function.
119. Use function notation and evaluate a function.
120. Simplify an expression involving powers of  $i$ .
121. Add, subtract, multiply and divide complex numbers.

122. Solve a quadratic equation using the square root property.
123. Solve a quadratic equation by completing the square.
124. Solve a quadratic equation by using the quadratic formula.
125. Use the discriminant to determine the nature of the solutions to a quadratic equation.
126. Graph a quadratic function and identify the vertex and intercepts.
127. Simplify expressions involving rational exponents.