

# Math 8-Honors: “I CAN” Statements

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## Term 1

1. I CAN identify rational and irrational numbers understand their decimal expansion.
2. I CAN compare rational and irrational numbers.
3. I CAN order rational and irrational numbers and place them on a number line.
4. I CAN analyze rational and irrational numbers and convert between them.
5. I CAN approximate irrational numbers and use them to estimate the value of expressions.
6. I CAN evaluate small perfect squares and understand their value.
7. I CAN evaluate small perfect cube roots understand their value.
8. I CAN represent solutions to equations using square and cube root symbols.
9. I CAN explain a proof of the Pythagorean Theorem and its converse.
10. I CAN apply the Pythagorean Theorem to determine unknown side lengths of a triangle.
11. I CAN apply the Pythagorean Theorem to find the distance between two points.
12. I CAN solve real-world problems using the Pythagorean Theorem.
13. I CAN solve multi-step equations with rational numbers.
14. I CAN solve multi-step equations involving algebraic properties including the distributive property.
15. I CAN solve multi-step equations with a single exponent on one or both sides of the equation.
16. I CAN solve linear equations with one solution.
17. I CAN solve linear equations with no solutions.
18. I CAN solve linear equations with infinite solutions.
19. I CAN identify the number of solutions to linear equations.

## Term 2

20. I CAN understand the definition and classification of sets and subsets.
21. I CAN use the element set notation for union  $\cup$ , element  $\in$ , intersection  $\cap$ , non element  $\notin$  and null set  $\emptyset$ .
22. I CAN find unions and intersections of sets given a description, set notation, or graph.
23. I CAN apply the properties of exponents.
24. I CAN perform operations with exponents.
25. I CAN understand numbers in scientific notation.
26. I CAN write numbers in scientific notation.
27. I CAN perform operations with scientific notation.
28. I CAN analyze real-world problems by converting very large/small numbers to scientific notation.
29. I CAN determine and use appropriate units for measure when working with scientific notation.
30. I CAN determine and use appropriate units for measure when working with shapes and figures.
31. I CAN use appropriate units for measure when working with formulas.
32. I CAN use formulas to find the volume of cones, cylinders, and spheres.
33. I CAN explain the concept of a function.
34. I CAN interpret unit rate and rate of change as slope.
35. I CAN explain slope using similar triangles.
36. I CAN find slope using slope formula.
37. I CAN compare and evaluate linear relationships.
38. I CAN graph linear relationships.

## **Term 3**

39. I CAN explain equations in the form  $y = mx + b$ .
40. I CAN write equations in the form  $y = mx + b$  by gathering information from points, and graphs.
41. I CAN graph equations in the form  $y = mx + b$  by gathering information from tables and situations.
42. I CAN identify and evaluate a function.
43. I CAN construct a function rule given a table or graph.
44. I CAN construct a real-world function by computing the rate of change and identifying the y-intercept.
45. I CAN identify linear and nonlinear equations given a function.
46. I CAN graph points in a three-dimensional coordinate system.
47. I CAN graph line segments in a three-dimensional coordinate system.
48. I CAN use Euler Circuits to describe and solve problems involving network paths.
49. I CAN use Hamiltonian Circuits to describe and solve problems involving network paths.
50. I CAN contrast and compare Euler and Hamiltonian Circuits for the same networks.
51. I CAN explain and understand systems of equations.
52. I CAN find and describe the number of solutions to a system of equations without graphing.
53. I CAN solve systems of equations graphically and algebraically.
54. I CAN use systems of equations to solve real-life problems.

## Term 4

55. I CAN perform transformations using the property of rotation, reflection and translation.
56. I CAN perform transformations using the property of dilation.
57. I CAN describe the difference of similar vs congruent figures.
58. I CAN describe the effects of rotations, reflections, translations and dilations using coordinate notation.
59. I CAN understand and explain congruent figures using rotation, reflection and translation.
60. I CAN explain figure similarity as a result of combining rotations, reflections, translations, and dilations.
61. I CAN understand angle sum theorem and apply it to triangles.
62. I CAN describe and use same-side interior and exterior angle theorems through transversals and parallel lines.
63. I CAN describe and use alternate interior and exterior angle theorems through transversals and parallel lines.
64. I CAN describe and use the corresponding angle theorems through transversals and parallel lines.
65. I CAN understand that fair division may be discrete or continuous.
66. I CAN understand that apportionment must be discrete.
67. I CAN determine mathematical criteria for fairness, using quantitative and qualitative measures.
68. I CAN determine mathematical criteria for apportionment.
69. I CAN understand the use of apportionment in the U.S. political system.
70. I CAN understand different voting systems.
71. I CAN compare and contrast different voting systems.
72. I CAN determine the results of an election using various voting systems.
73. I CAN construct and interpret scatter plots.
74. I CAN use a trend line and its resulting equation to describe data in a scatter plot.
75. I CAN describe and interpret graphs using rate of change and the initial value.
76. I CAN collect categorical data and create two-way tables to analyze it.