# Grade 8 #8th Grade

1. How can the coordinate plane help me understand properties of reflections, translations, and rotations?
2. What is the relationship between reflections, translations, and rotations?
3. What is a dilation and how does this transformation affect a figure in the coordinate plane?
4. How can I tell if two figures are similar?
5. In what ways can I represent the relationships that exist between similar figures using the scale factors, length ratios, and area ratios?
6. What strategies can I use to determine missing side lengths and areas of similar figures?
7. Under what conditions are similar figures congruent?
8. When I draw a transversal through parallel lines, what are the special angle and segment relationships that occur?
9. Why do I always get a special angle relationship when any two lines intersect?
10. How can I be certain whether lines are parallel, perpendicular, or skew lines?
11. How can I apply the properties of integer exponents to generate equivalent numerical expressions?
12. How can I represent very small and large numbers using integer exponents and scientific notation?
13. How can I perform operations with numbers expressed in scientific notation?
14. How can I interpret scientific notation that has been generated by technology?
15. What are some applications of scientific notation?
16. Why is it useful for me to know the square root of a number?
17. How do I simplify and evaluate numeric expressions involving integer exponents?
18. How can the properties of exponents and knowledge of working with scientific notation help me interpret information?
19. What is the difference between rational and irrational numbers?
20. Why do we approximate irrational numbers?
21. How do we locate approximate locations of irrational numbers on a number line and estimate the values of irrational numbers?
22. What strategies can I use to create and solve linear equations with one solution, infinitely many solutions, or no solutions?
23. What is the length of the side of a square of a certain area?
24. What is the relationship among the lengths of the sides of a right triangle?
25. How can the Pythagorean Theorem be used to solve problems?
26. What is the relationship between the Pythagorean Theorem and the distance formula?
27. How can I use the Pythagorean Theorem to find the length of the hypotenuse or leg of a right triangle?
28. How do I know that I have a convincing argument to informally prove Pythagorean Theorem?
29. What is Pythagorean Theorem and when does it apply?
30. Where can I find examples of two and three-dimensional objects in the real-world?
31. How does a change in any one of the dimensions of cylinder, cone, or sphere affect the volume of that cylinder, cone, or sphere?
32. How does the volume of a cylinder, cone, and sphere with the same radius change if it is doubled?
33. How do I simplify and evaluate algebraic equations involving integer exponents, square and cubed root?
34. How do I know when an estimate, approximation, or exact answer is the desired solution?
35. What is a function?
36. What are the characteristics of a function?
37. How do you determine if relations are functions?
38. How is a function different from a relation?
39. Why is it important to know which variable is the independent variable?
40. How can a function be recognized in any form?
41. What is the best way to represent a function?
42. How do you represent relations and functions using tables, graphs, words, and algebraic equations?
43. What strategies can I use to identify patterns?
44. How does looking at patterns relate to functions?
45. How are sets of numbers related to each other?
46. How can you use functions to model real-world situations?
47. How can graphs and equations of functions help us to interpret real-world problems?
48. How can patterns, relations, and functions be used as tools to best describe and help explain real-life relationships?
49. How can the same mathematical idea be represented in a different way? Why would that be useful?
50. What is the significance of the patterns that exist between the triangles created on the graph of a linear function?
51. When two functions share the same rate of change, what might be different/the same about their each of their representations? W
52. What does the slope of the function line tell me about the unit rate?
53. What does the unit rate tell me about the slope of the function line?
54. What strategies can I use to help me understand and represent real situations involving linear relationships?
55. How can the properties of lines help me to understand graphing linear functions?
56. What can I infer from the data?
57. How can functions be used to model real-world situations?
58. How does a change in one variable affect the other variable in a given situation?
59. Which tells me more about the relationship I am investigating – a table, a graph or an equation? Why?
60. How can you construct and interpret two-way tables?
61. How can I determine if there is an association between two given sets of data?
62. How can I find the relative frequency using two-way tables?
63. What does the point of intersection mean?
64. What is a system of equations?
65. What does it mean to solve a system of linear equations?
66. How do I decide which method would be easier to use to solve a particular system of equations?
67. How can I translate a problem situation into a system of equations?
68. What does the solution to a system tell me about the answer to a problem situation?
69. How can I interpret the meaning of a “system of equations” algebraically and geometrically?
70. What does the geometrical solution of a system mean?