# Grade 7 #7th Grade

1. What strategies are most useful in helping develop algorithms for adding, subtracting, multiplying, and dividing positive and negative rational numbers?
2. What are the steps to converting a rational number to a repeating or terminating decimal?
3. How is the distributive property applied when rewriting and evaluating algebraic expressions?
4. How can we represent value using variables?
5. What properties are required in order to rewrite and evaluate algebraic expressions and solve equations?
6. How are verbal expressions translated to algebraic expression?
7. Is there more than one way to represent a linear equation?
8. How can information from a word problem be translated to create an equation?
9. What are the similarities and differences between equations and inequalities?
10. What strategies can be used to solve and graph inequalities?
11. How are the rules of order of operations used when rewriting expressions?
12. How can rewriting an expression in different forms show how the quantities in it are related?
13. How can you compute ratios of length in like or different units?
14. How can you compute unit rates involving rational numbers, fractions and complex fractions?
15. How do I interpret a unit rate (using words and mathematically)?
16. What strategies can be used to compare ratios?
17. How do I verify if two quantities are directly proportional?
18. How can I use tables, graphs or equations to determine whether a relationship is proportional?
19. How do I interpret a distance time graph and determine a point of intersection?
20. How can models be used to solve percent problems?
21. How do I apply mental math strategies to solve percent problems?
22. How are distances and measurements translated into a map or scale drawing?
23. How do I determine the an appropriate scale for the area (such as my yard or school) that I am measuring and mapping?
24. How is the unit rate represented in tables, graphs, equations and diagrams?
25. How is unit rate computed in real-world problems?
26. How are ratios and their relationships used to solve real world problems?
27. How do I solve and interpret solutions of real-world percent problems?
28. How do I utilize percent of increase and decrease as an aspect of multiplication?
29. How does my understanding of unit rate save me money?
30. How can I determine the unit rate for a product that I might purchase?
31. What are the characteristics of angles and sides that will create geometric shapes, especially triangles?
32. How can attributes of specific shapes, symmetry, and angles be used to accurately describe the design of a mosaic pattern?
33. How can angle and side measures help us to create and classify triangles?
34. How can special angle relationships – supplementary, complementary, vertical, and adjacent – be used to write and solve equations for multi-step problems?
35. How can the interior and exterior measures of polygons?
36. How are angle relationships applied to similar polygons?
37. How are the circumference, diameter, and pi related?
38. How do we find the circumference of a circle?
39. How are the areas of parallelograms and triangles related to the area of a rectangle?
40. How can area be maximized when the perimeter is a fixed number?
41. How is the formula for the area of a circle related to the formula for the area of a parallelogram?
42. How do I apply the concepts of surface area and circumference to solve real-world problems?
43. What two-dimensional figures can be made by slicing a cube by planes?
44. What two-dimensional figures can be made by slicing: cones, prisms, cylinders, and pyramids by planes?
45. How do you determine volume and surface area of a cube?
46. How do you determine surface area of a cylinder?
47. How can I use formulas to determine the volumes of fundamental solid figures?
48. How can I estimate the surface area of simple geometric solids?
49. How can I use surface areas of plane figures to derive formulas for the surface areas of solid figures?
50. What are different sampling techniques used in real life?
51. How do I determine an appropriate sample size?
52. How can random samples be used to make predictions about populations?
53. How are proportions used to estimate information about populations?
54. How does the data describe its center, spread and representation of the population?
55. What is the difference between the measure of center and measure of variation?
56. How do I display data on a number line?
57. What are ways to summarize numerical data sets?
58. Why must the numeric probability of an event be between 0 and 1?
59. What is the likeliness of an event occurring based on the probability near 0, ½, or 1?
60. How can you determine the likelihood that an event will occur?
61. How are the outcomes of given events distinguished as possible?
62. What is the difference between theoretical and experimental probability?
63. What is the significance of a large number of trials?
64. How do I determine a sample space?
65. How can you represent the likelihood of an event occurring?
66. How are theoretical probabilities used to make predictions or decisions?
67. How can you represent the probability of compound events by constructing models?
68. How can I use probability to determine if a game is worth playing or to figure my chances of winning the lottery?
69. What is the process to design and use a simulation to generate frequencies for compound events?