FINAL REVIEW PACKET EXPLANATIONS

Matching examples for each review question plus a list of vocabulary (vocabulary only mentioned first time it is introduced) and objectives covered. For each question, think about how it may change if different numbers or pictures were used.

1. See example 2 in 1.5 and example 9 in 2.1.

Vocabulary: domain, range, function.

Objectives: be able to list domain and range given a table or set of ordered pairs; apply the definition of a function to determine if a table or list of ordered pairs represents a function

2. See example 7 in 2.4

Objectives: Know how to find the equation of a vertical line; recognize when you have a vertical line

3. See example 1 in 2.3

Vocabulary: slope-intercept form of line; slope; y-intercept

Objectives: Know the connection between the sign of the slope and the direction of a line; the slope of horizontal and vertical lines; how to identify the y-intercept off a picture, how to read inequality symbols

4. See example 1 and 4 in 2.1

Vocabulary: table, function notation

Objectives: know how to read a table; how to use function notation to identify matching inputs and outputs on a table

5. See example 7 in 2.3; see example 3 in 2.4

Vocabulary: rate of change

Objectives: be able to interpret a point by reading the labels off the picture; find the equation of a line given any two points; interpret slope as a rate of change; use function notation when writing an equation

6. See example 4 in 2.4; see example 11 in 3.1

Vocabulary: x-intercept values and y-intercept values

Objectives: be able to write x- and y- intercept values as points; find slope between two points; write an equation in slope-intercept form if slope and y-intercept are known

7. See example 9 in 2.4

Vocabulary: perpendicular lines

Objectives: know that perpendicular lines have slopes that are opposite reciprocals; how to find the equation of a line perpendicular to another line; how to graph lines

8. See example 4 in 2.1

Objectives: know how to use an equation to fill in a table; how to simplify fractions; the difference between decimal answers and simplified fraction answers

9. See example 8 in 2.4

Vocabulary: parallel lines

Objectives: know that parallel lines have the same slopes; know how to find the equation of a line parallel to another line

10. See example 7 in 2.4, and example 5 in 2.3

Vocabulary: horizontal lines

Objectives: Know how to find the equation of a horizontal line; how to recognize when you have a horizontal line

11. See examples 2 and 3 in 2.4

Objectives: be able to find the equation of a line given two points on a picture but not the y-intercept, to count slope off a picture, to read scale off a picture, to label a point on a graph using the given gridlines

12. See example 7 in 2.3

Objectives: be able to calculate slope, or rate of change, from information off a graph; to interpret slope in context

13. See example 10 in 2.1

Vocabulary: vertical line test

Objectives: know how to apply the definition of a function to determine if a graph represents a function, to give domain and range using inequality notation using the information from a graph

14. See example 2 in 2.2

Objectives: be able to decide if a table represents a linear function or not; be able to find the equation of a line from information off a table

15. See examples 2 and 3 in 2.3

Objectives: be able to plot points, find the slope between two points, connect points to make a graph

16. See example 7 in 2.4

Vocabulary: standard form of a line

Objectives: Know how to find the equation of a horizontal line; how to recognize when you have a horizontal line

17. See example 2 and 5 in 2.3

Objectives: be able to find slope of any line using a graph; recognize special lines and know their slopes

18. See example 7 in 2.1

Objectives: be able to describe the domain of any equation; know that you cannot divide by zero and that you cannot take the even root of a negative number – and how those conditions determine the correct domain of an equation

19. See example 1 in 1.5, example 9 in 2.1

Objectives: be able to list domain and range given a table or set of ordered pairs; apply the definition of a function to determine if a table or list of ordered pairs represents a function

20. See example 4 in 2.4, example 5 in 3.1

Vocabulary: mathematical models

Objectives: be able to translate information into points; know whether to use the actual year number or a count of years passed; be able to find the linear function and use the function to answer questions

21. See example 1 in 4.3

Vocabulary: inequalities

Objectives: be able to graph an inequality on the xy-plane

22. See example 2 in 5.4

Vocabulary: factor, trinomial

Objectives: be able to factor in several steps, pull out greatest common factors, factor three terms by whatever method you prefer

23. See examples 4 and 5 in 5.2

Vocabulary: FOIL, binomials

Objectives: be able to multiply binomials, simplify algebraic expressions

24. See example 4 in 3.2

Objectives: be able to translate sentences into equations, solve one-variable equations

25. See example 4 in 5.3

Vocabulary: quadratic equation

Objectives: be able to solve quadratic equations by factoring; check answers by plugging back into original equation

26. See example 7 in 4.1, example 8 in 4.2

Vocabulary: system of equations

Objectives: be able to solve a system of linear equations using whatever method you prefer, be able to recognize how many solutions a system of linear equations might have

27. See example 2 in 3.3

Vocabulary: set builder notation

Objectives: be able to solve a linear inequality, know the rules for working with inequalities

28. See example 6 in 5.1

Vocabulary: subtraction, distribution

Objectives: be able to change subtraction to addition by distributing the negative sign, know how to work with parentheses, be able to gather like terms

29. See example 12 in 4.2, example 11 in 3.2

Vocabulary: simple interest

Objectives: be able to translate account and interest information (totals and parts) into an equation, recognize this is a system of equations, solve a system of equations

30. See example 7 in 2.4

Objectives: Know how to find the equation of a vertical line; recognize when you have a vertical line

31. See examples 1 and 2 in 3.2

Objectives: be able to isolate a variable in an equation

32. See examples 2 and 10 in 4.1, example 3 in 2.3

Objectives: be able to solve a system by graphing; be able to graph lines

33. See examples 3 and 7 in 3.4

Vocabulary: three-part inequalities, interval notation

Objectives: solving three-part inequalities, using interval notation

34. See examples 4 and 5 in 3.3, example 7 in 3.1

Objectives: use a graph to solve an equation or inequality

35. See examples 8 and 9 in 7.1

Vocabulary: radical notation, fractional exponents

Objectives: be able to translate between radical notation and fractional exponent notation

36. See example 11 in 3.1

Objectives: be able to rewrite an equation into slope-intercept form; graph a line when given its equation

37. See the "real world" example at the beginning of 4.3

Objectives: be able to translate a situation into a graph, know the difference between less than and less than or equal to

38. See examples 7 and 9 in 2.4

Objectives: be able to come up with the equation of a perpendicular line, recognize special lines and know how to work with them

39. See example 1 in 5.1

Vocabulary: difference of squares

Objectives: be able to factor difference of squares

40. See example 4 in 5.3, and example 1 in 5.4

Vocabulary: zero-product property (5.2)

Objectives: be able to solve a quadratic equation by factoring

41. See example 5 in 7.1, and example 4 in 7.2

Objectives: be able to simplify radicals, know when a negative underneath a radical is acceptable

42. See example 9 in 7.1

Vocabulary: evaluate

Objectives: know how to work with fractional exponents, be able to simplify numerical expressions by hand or by using your calculator

43. See example 2 in 8.2

Objectives: be able to solve a quadratic equation by factoring, know how many solutions a quadratic equation may have

44. See example 3 in 7.5

Vocabulary: extraneous solutions

Objectives: be able to solve equations containing radicals, identify extraneous solutions by checking answers

45. See example 9 in 7.3

Objectives: be able to multiply expressions containing radicals

46. See examples 10 and 12 in 7.1

Objectives: be able to change negative exponents to positive exponents, to rewrite fractional exponent expressions using radical notation, to rewrite radical notation using fractional exponents

47. See examples 1 and 3 in 8.1

Vocabulary: minimum value, maximum value, increasing, decreasing, parabola

Objectives: be able to find the vertex of a parabola, be able to describe where a graph is increasing or decreasing using either inequality or interval notation

48. See example 12 in 7.1, and examples 4, 6, and 8 in 7.2

Objectives: be able to simplify radicals

49. See examples 1 and 4 in 6.4

Objectives: be able to solve rational equations, know what answers would not be acceptable, know how to check your solutions

50. See example 1 in 2.1

Objectives: be able to use function notation given graphical information

51. See example 6 in 6.3

Objectives: be able to add rational expressions, simplify rational expressions

52. See examples 2 and 3 in 7.3

Objectives: be able to simplify radicals

53. See example 9 in 6.2

Objectives: be able to divide rational expressions, simplify rational expressions

54. See example 7 in 8.3

Vocabulary: square root property

Objectives: be able to isolate a variable in an equation, know when and how to use the square root property

55. See example 6 in 8.1

Objectives: be able to find the vertex of a parabola, know if you are asked for an input or output value and how to find those values using the given equation

56. See example 9 in 7.1

Objectives: be able to rewrite fractional exponent expressions using radical notation, evaluate numerical expressions

57. See example 1 in 7.6

Vocabulary: complex numbers

Objectives: be able to work with negatives under a square root using complex numbers

58. See example 8 in 1.4, making connections in 2.4, example 11 in 7.1

Objectives: be able to identify input and output values, be able to use your calculator for number work, be able to round decimals correctly

59. See example 2 in 4.1, see types of linear systems and the yellow box in 4.1

Objectives: be able to read a graph and identify important points, including solutions to systems (point of intersection); know when a system does not have a solution, or has infinitely many solutions, by examining a graph

60. See examples 1 and 3 in 8.4

Vocabulary: quadratic formula

Objectives: know when and how to use the quadratic formula, know the difference between exact and approximate answers

61. See examples 2 and 7 in 2.1

Objectives: use function notation and equation information to find specific values; be able to describe the domain of any equation; know that you cannot divide by zero and that you cannot take the even root of a negative number – and how those conditions determine the correct domain of an equation

62. See example 1 in 8.3, example 6 in 8.4

Vocabulary: discriminant, leading coefficient

Objectives: know what the sign of the leading coefficient tells you about the graph of the parabola, know that the solutions of an equation set equal to zero are the same as the x-intercepts on the graph, know how the sign of the discriminant determines the number of x-intercepts on the graph of the parabola, be able to read x-intercepts off a graph

63. See example 5 in 8.4, example 1 in 8.3

Objectives: know how to calculate the discriminant, what the sign of the discriminant tells you about the number of solution to the quadratic equation set equal to zero

64. See example 2 in 8.4

Objectives: be able to use the square root property to solve quadratic equations, know when the square root property is an appropriate method for solving quadratic equations

65. See example 1 in 8.4

Objectives: know how to find x-intercepts given an equation

66. See example 2 in 8.3, example 7 in 8.4

Objectives: know how to solve a quadratic equation; be able to recognize if a simple quadratic equation will have real or complex solutions

67. See example 6 in 2.1

Objectives: be able to describe domain and range given a picture, using inequality notation

68. See example 1 in 8.1

Vocabulary: axis of symmetry

Objectives: identify if a graph is linear or quadratic, identify the vertex and axis of symmetry using the graph

69. See example 5 in 6.3

Objectives: be able to add rational expressions without common denominators, simplify rational expressions

70. See example 7 in 2.1, examples 3 and 4 in 6.4

Objectives: identify problem values (potential extraneous solutions) given an equation

71. See example 5 in 5.4, example 2 in 5.7

Objectives: solve a quadratic equation

72. See example 7 in 3.4

Objectives: know the connection between inequality, interval, and number line notation

73. See example 3 in 4.3

Vocabulary: system of inequalities

Objectives: graph a system of inequalities

74. See examples 9 and 10 in 3.2

Vocabulary: percentages

Objectives: be able to translate increasing or decreasing percentage statements into equations, and solve the resulting equation

75. See example 10 in 4.2

Objectives: be able to work with distance, rate, and time scenarios; know how to write rates when you have two conditions working together or against each other

76. See example 7 in 3.2

Objectives: be able to work with distance, rate, and time scenarios;

77. See example 5 in 6.2

Vocabulary: lowest terms

Objectives: simplify rational expressions

78. See example 3 in 6.4

Objectives: solve rational equations