Algebra 2 Review Quiz LOOKALIKE for Chapters 1-11

Name _____

_____ 1. Solve: $5(2n + 3) = n + 10 + 9n + 5$

_____ 2. Solve: $\frac{2n+6}{6} = \frac{n+5}{2}$

_____ 3. Solve: $-3(2a - 4) = -2(2a + 8)$

_____ 4. Solve: $|n + 1| - 4 = 10$

_____ 5. In interval notation, what is $x < 3$?

_____ 6. What is the DOMAIN of Graph 1 on the Graph Page?
A. [-3, 3) B. (-3, 3] C. (-2, 1] D. [-2, 1)

_____ 7. What is the RANGE of Graph 1 on the Graph Page?
A. [-3, 3) B. (-3, 3] C. (-2, 1] D. [-2, 1)

_____ 8. What is the domain of $f(x) = \sqrt{x-3}$?
A. **R** except $x \neq 3$ B. **R**: $x > 3$ C. **R**: $x \geq 3$ D. **R**

_____ 9. What is the domain of $f(x) = \frac{2x}{x+6}$?
A. **R** except $x \neq -6$ B. **R**: $x > -6$ C. R: $x \geq -6$ D. **R**

_____ 10. Looking at Graph 2, what interval is the graph **decreasing**?
A. $(-\infty, -1.2)\ (1.2, \infty)$ B. (-1.2, 1.2)
C. $(-\infty, -2)\ (2, \infty)$ D. (-1.2, 3)

_____ 11. Factor $x^2 - 25$

_____ 12. Factor $x^2 - 9x + 20$

_____ 13. What is the x-intercept of $f(x) = x^2 + 7x + 10$?

_____ 14. What is the y-intercept of $f(x) = x^2 + 9x + 20$?

_____ 15. When graphing f(x) = $9(x+2)^3 - 5$, what is true?

A. The graph shifted right 2 units
B. The graph stretched horizontally
C. The graphed shifted up 5 units
D. None of these things happened.

Look at the graphs on the graph sheet and determine the equation of graph 3 and 4.

_____ 16. Graph 3

_____ 17. Graph 4

_____ 18. Simplify: $\sqrt[3]{8a^6}$

_____ 19. Simplify $\sqrt{18} + \sqrt{50}$

_____ 20. Simplify: $\dfrac{2}{\sqrt{3}}$

_____ 21. Simplify: $\dfrac{2+\sqrt{2}}{2-\sqrt{2}}$

_____ 22. Simplified to its lowest value, what is i^{19}?

A. 1 B. -1 C. i D. -i

_____ 23. Simplify (4 – 3i) (5 – 2i)

_____ 24. In simplified radical form, what is $x^{\frac{3}{5}} \bullet x^{\frac{1}{4}}$

A. $\sqrt[9]{x^{10}}$ B. $\sqrt[5]{x^4}$ C. $x\sqrt[7]{x^3}$ D. $\sqrt[20]{x^{17}}$

_____ 25. In simplified radical form, what is $\left(x^{\frac{2}{3}}\right)^{\frac{4}{5}}$

A. $\sqrt[15]{x^8}$ B. $x\sqrt[7]{x^6}$ C. $x\sqrt[15]{x^7}$ D. $x\sqrt[15]{x^3}$

_____ 26. Solve for x: $3\sqrt{7x+2}+1=13$

_____ 27. Factor $3n^2 + 11n + 6$

_____ 28. Use factoring to solve $2n^2 + n - 10 = 0$

_____ 29. Solve for the variable using your knowledge of square roots:
$2(x + 2)^2 - 32 = 0$

_____ 30. If the discriminant value of a quadratic is 12, how many solutions exist?

_____ 31. What would have been the discriminant value of the equation in Graph 5?

_____ 32. Use the quadratic equation to solve $4x^2 + 5x + 1 = 0$. Round yours answers to the nearest tenth.

For 33-35, let $f(x) = 4x - 3$ $g(x) = 5x + 3$ $h(x) = x^2$

_____ 33. $(f - g)\,x$ _____34. $f(g(-1))$ _____35. $h(g(x))$

_____ 36. What is the inverse of $f(x) = x^2 + 7$?

In 37-39, solve the system of equations and put the answer as an ordered pair if there is a solution.

_____ 37. $\begin{cases} y = x - 8 \\ x - 3y = 4 \end{cases}$ _____ 38. $\begin{cases} 4x - 2y = 6 \\ y = 2x - 1 \end{cases}$ _____ 39. $\begin{cases} 4x + y = 11 \\ x - y = -1 \end{cases}$

_____ 40. The sum of two numbers is 114 and they have a difference of 22. What are the two numbers?

In 41-44, simplify each expression without worrying about the excluded values.

_____41. $\frac{4x+6}{5x^2+10x} \bullet \frac{5x}{6x+9}$ _____ 42. $\frac{x^2+12x+20}{3x+12} \div \frac{x+2}{x+4}$

_____ 43. $\frac{2x^2+15x+18}{3x^2+19x+6} \div \frac{8x+12}{4x-4}$ _____ 44. $\frac{x^3+x^2-12x}{x^3+3x^2-10x} \div \frac{4x-12}{2x+10}$

_____ 45. State the excluded values: $\frac{x^3+12x^2+11x}{x^3+7x^2+10x} \div \frac{x+14}{x^2+11x+30}$

_____ 46. Simplify $\frac{3}{4x^2y^3} + \frac{2}{3x^3y^2z}$

_____ 47. Simplify $\frac{x-5}{x^2+8x+12} + \frac{x+10}{x^2+7x+10}$

_____ 48. Solve $\frac{5}{2n} + \frac{5}{4n^2} = \frac{3}{n}$

_____ 49. Solve $\frac{2}{n} + \frac{3}{n+2} = \frac{5}{n+3}$

_____ 50. What is the horizontal asymptote of $y = \frac{8x+1}{2x-2}$?

_____ 51. What is the vertical asymptote of $y = \frac{x^3+5}{x^2-25}$?

_____ 52. Find the 14th term of this sequence: 2, 2.6, 3.38, 4.394, . . .

_____ 53. Find the 22nd term of this sequence: 5, 6.6, 8.2, 9.8, . . .

_____ 54. Find the sum of the first 10 terms of this sequence: 1, 8, 15, 22, . . .

_____ 55. Find the sum of the first 10 terms of this sequence: -3, 6, -12, 24, . . .

_____ 56. Determine the sum of the infinite geometric series: 32, 25.6, 20.48, . . .

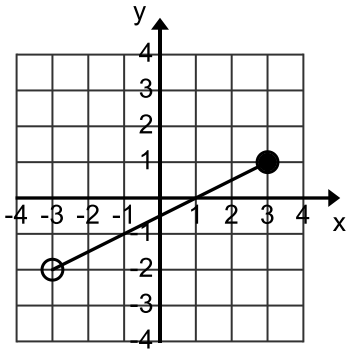
Formulas

Aritmetic: $a_n = a_1 + (n-1)d$ Geometric: $a_n = a_1 \bullet r^{n-1}$

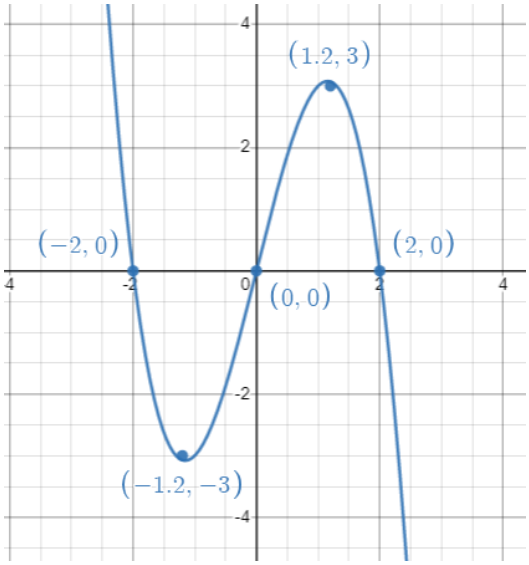
Arithmetic: $S_n = \frac{n}{2}[2a_1 + (n-1)d]$ Geometric: $S_n = \frac{a_1(1-r^n)}{1-r}$ $S_\infty = \frac{a_1}{1-r}, \ |r| < 1$

Graph Page

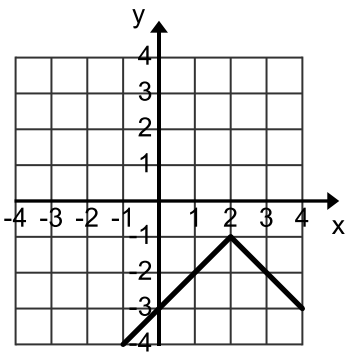
Graph 1



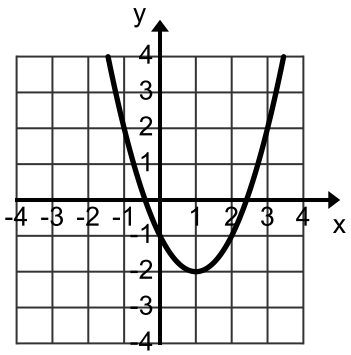
Graph 2



Graph 3



Graph 4



Graph 5