Algebra 1 ~ Final Exam ~ Study Guide ~ 2017-2018

Due at the beginning of the Final exam – 50 points!
(Work must be shown on a separate sheet of paper)

Chapter 6:

1. What is $5x^{-4}$ with a positive power?
2. Simplify: x^{-4}
3. Simplify: $(3x^3yz^4)^3$
4. Simplify: $\left(4x^3\right)^2\left(2x^3y\right)$
5. Write in Radical form: $25^{3/2}$
6. Write in Radical form: $24x^{5/6}$
7. Graph $f(x)=3^{x+2}$
8. Graph $g(x)=\frac{1}{2}\bullet 4^x$

Chapter 7

9. Multiply: $(2x-6)^2$
10. Simplify: $(6x^3-3x^2-x-4)-(x^3+2x-5)$
11. Simplify: $(3x^3-2x+4)+(2x^2+2x-5)$
12. Multiply: $(b+4)(b-4)$
13. What is the GCF of $30x^3y^5$ and $6xy^3$?
14. Factor: x^2-64
15. Factor: $x^2-7x+12$
16. Factor: $5x^2-26x+5$
17. Factor: x^4+2x^3-3x-6
18. Factor (make sure to factor all the way): $4x^3+4x^2-4x-4$
19. What is the area and perimeter of the figure below:

$x-2$

$x+1$

Chapter 8

20. Graph $f(x)=x^2-2x-1$
21. Graph $f(x)=(x+4)(x-6)$
22. Graph $h(x)=(x-3)^2-2$
23. Write the quadratic equation that has a vertex of (2, 4) and goes through the point (5, 31) in Standard Form.
24. Write the quadratic equation with x-intercepts at (3, 0) and (7, 0) that goes through the point (6, 3) in Standard Form.
25. Tell whether the table represents a linear, exponential, or a quadratic function?

X	1	2	3
Y	16	32	64

26 Tell whether the table represents a linear, exponential, or a quadratic function?

X	-2	-1	0
Y	-8	-2	0

Algebra 1 ~ Final Exam ~ Study Guide ~ 2017-2018

Due at the beginning of the Final exam – 50 points!
(Work must be shown on a separate sheet of paper)

Chapter 9

27. Simplify: $\sqrt{54x^3}$

28. Simplify: $\sqrt{9x^3} \cdot \sqrt{4x^5}$

29. Rationalize the denominator: $\frac{5}{\sqrt{11}}$

30. Simplify: $5\sqrt{63}$

31. What is the sum of $\sqrt{45} + \sqrt{20}$?

32. Simplify: $\sqrt{2} + 4\sqrt{2} + 5\sqrt{2}$

33. What are the solutions for $x^2 - 6x + 8 = 0$?

34. What are the solutions for $6x^2 - 4x - 10 = 0$?

35. What are the solutions for $x^2 - 8x = -15$?

36. Solve: $(x + 4)^2 = 121$

37. Can every quadratic equation be solved by factoring?

38. Can every quadratic equation be solved by using the Quadratic Formula?

39. What is the Quadratic Formula?

40. What are the steps to solve by using square roots?

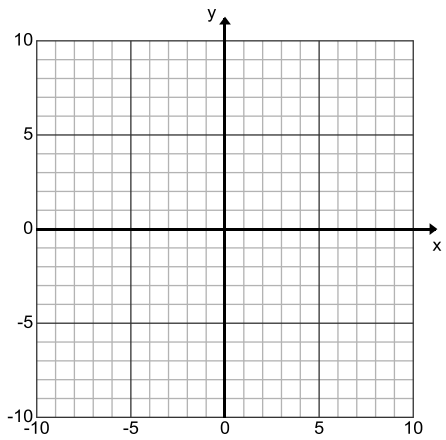
41. What are the steps to solve by completing the square?

42. How does solving for x in an equation relate to the graph of the equation?

Additional questions:

43. Describe the graph of a linear equation, quadratic equation, and an exponential equation?
    a. What is the shape of each graph?
    b. State their differences in equations and graphs?

44. Graph $f(x) = 3x - 4$



45. Graph the transformation of the parent function below:
    a. $g(x) = f(x) - 3$
    b. $g(x) = f(x + 4)$