Final Review   Name_____
Secondary Math 3

Quarter 3

CHAPTER 6- Sequences, Series and Exponentials
Find the stated term for the following sequences

1. −3, −6, −12, −24, ...; 9th term

a=

r=

9th term?=

2. 2, 7, 12, 17,.....

a=

d=

11th Term?=

Find the sum of the geometric series.

3. 4 + 16 + 64 + 256 + ... + 16,384
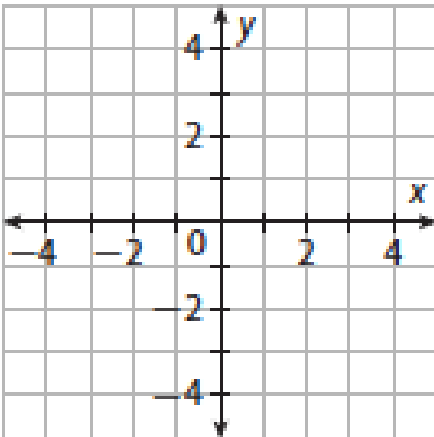
4. 3 − 6 + 12 − 24 + ... − 1536

Find the domain, range, and transformations and graph each of the following functions
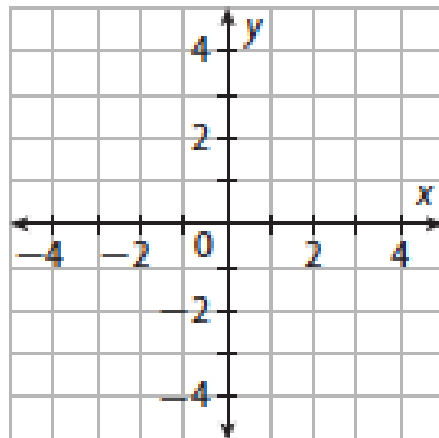
5. $f(x) = 3^{x-2} - 1$

D:

R:

y-int:

6. $f(x) = \left(\frac{1}{3}\right)^x + 2$

D:

R:

y-int:

7. You invest $3000 into an account at a 3.5% interest rate compounding continuously. When will you have $5000? $A(t) = Pe^{rt}$

8. A car with a cost of \$25,000 is decreasing in value at a rate of 10% compounding quarterly. How much money will you have after 7 years? $A(t) = P\left(1 + \dfrac{r}{n}\right)^{nt}$

CHAPTER 7-Logs
Write the following in exponential or logarithmic form

9. $4^2 = 16$ 10. $e^{17} = a$ 11. $\log_7 x = 10$ 12. $\ln x = 32$

Evaluate the following

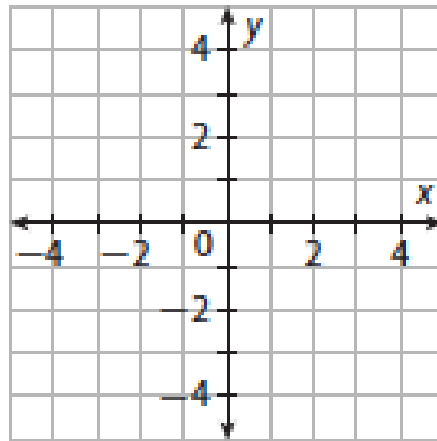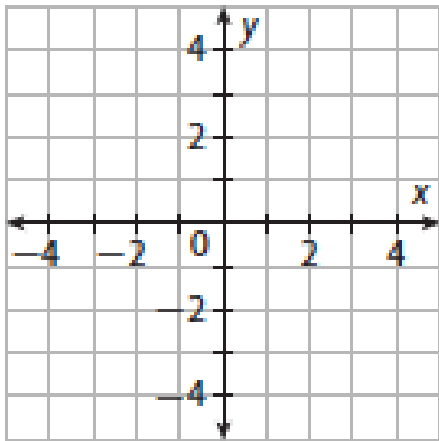13. $\log_{12} 12^{15}$ 14. $\ln e^{32}$ 15. $10^{\log 14}$ 16. $\log_5 \sqrt{5}$

Graph the following logs:

17. $y = \log(x + 4) - 1$ 18. $y = \log(x) + 3$

Solve the following. Round your answer to the nearest hundredth. Check for extraneous solutions.

19. $4^{2x+10} + 6 = 262$ 20. $7e^{\frac{x}{4}} = 500$

21. $\log_2 4x = 4$ 22. $\ln(x + 2) = \ln 30$

Quarter 4 Review

CHAPTER 8 -Radicals
Simplify.

23. $\sqrt{512x^2}$ 24. $\sqrt[3]{-162}$

Simplify.

25. $\sqrt[5]{-32x^6 y^{10} z}$ 26. $\sqrt[6]{448x^7 y^8}$

Evaluate without a calculator. Write in radical form, then simplify.

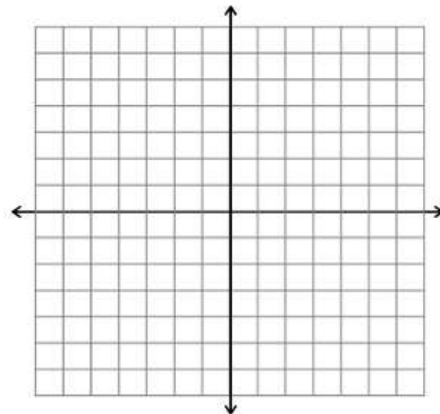27. $9^{\frac{1}{2}}$ 28. $32^{\frac{2}{5}}$

29. Graph each of the following:

A. $f(x) = \sqrt{x} - 4$
B. $f(x) = \sqrt{x + 4}$
C. $f(x) = \sqrt{x} + 4$
D. $f(x) = \sqrt{x - 4}$

Describe all transformations of the function *and* <u>state the domain and range</u>:

30. $y = 2\sqrt{x - 4} + 5$ 31. $y = -\sqrt{x} + 3$

Solve the following radical equations.

32. $x - 6 = \sqrt{7x - 54}$

33. $\sqrt{3x + 2} = 3\sqrt{x}$

34. $\sqrt[3]{x - 5} + 5 = -1$

CHAPTER 9-Trig

Fill in the blank with the correct ratio (opposite, hypotenuse, adjacent)

35. $\sin q =$_____ 36. $\cos q =$_____ 37. $\tan q =$_____
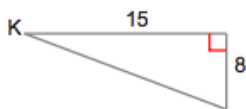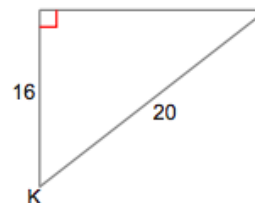
38. $\csc q =$_____ 39. $\sec q =$_____ 40. $\cot q =$_____

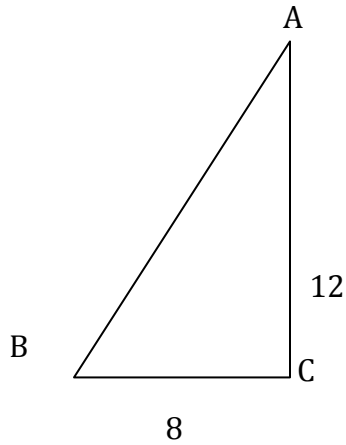Solve for the third side length. Then write all six trig functions for the following triangles according to angle K.

41.

42.

43. Solve the following triangle

A

12

B

C

8

ÐA_____   a_____
ÐB_____   b_____
ÐC_____   c_____

CHAPTER 10-Stats

44. The salaries at a small business with 7 employees are as follows:
$255,000, $32,000, $30,000, $28,000, $24,000, $22,000, $22,000

A. Find the mean, median and mode of the salaries.
B. Explain which measure of center best represents a typical employee's salary.

45. Find the five number summary, identify the range, IQR, and any outliers.

4	7	9	31	34	2	35	37	24	34	31	50
11	33	36	2	8	13	52	57	60	69	78	83

46. Label each bar with the percent probability an event will occur there.

$\bar{X}-3\sigma$ $\bar{X}-2\sigma$ $\bar{X}-1\sigma$ $\bar{X}$ $\bar{X}+1\sigma$ $\bar{X}+2\sigma$ $\bar{X}+3\sigma$