WARM UP

1. Put the following equation in log form $7^{3x+2} = 13$

2. Put the following equation in exponential form $3\log 7x = 150$

3. Find the inverse of the equation $\sqrt[3]{x+3} - 2 = y$

4. Find the standard deviation of the following data set $\{3, 5, 7, 100, 134, 145\}$

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Objectives

- Review Logs, Exponential Equations and Statistics

Homework

- Released test questions packet
  - Section I: 3, 4, 11, 12, 17, 19
  - Section II: none
  - Section III: 12, 13

- Any unfinished classwork problems

Schedule this week

✔ Monday — Quadratics and Polynomials
➡ Tuesday — Logs/Exponents and Statistics
Wednesday — Rational Functions
Thursday — Geometry
Friday — Trigonometry

After School Blitz sessions this week

Monday	Logarithms	Davis Schmutz	2:30 – 3:30	Complete Logarithms assignment Add 7 points to Logarithms Unit Test
Tuesday	Statistics	Dixon Davis	2:30 – 3:30	Complete Statistics assignment Add 7 points to Statistics Unit Test
Wednesday	Rational Expressions	Dixon Schmutz	2:30 – 3:30	Replace lowest quiz grade with 100
Thursday	Geometry	Dixon Schmutz Davis	2:30 – 3:30	Complete Geometry assignment Add 7 points to Geometry Unit Test
Friday	Trig with the Unit Circle	Dixon Schmutz Davis	2:30 – 3:30	Complete Trigonometry assignment Add 7 points to Trigonometry Unit Test

$$f(x) = a(b)^{x-h} + k$$

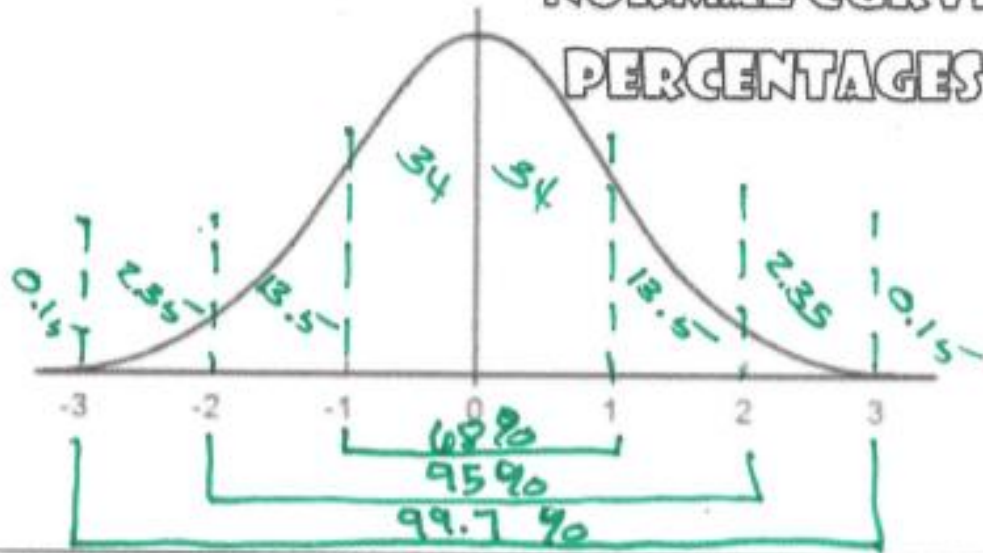| Properties of Exponents	$x^0 = 1 \quad x^{1/2} = \sqrt{x} \quad x^{\frac{m}{n}} = \sqrt[n]{x^m} \quad x^{-n} = \frac{1}{x^n}$
	$x^n x^m = x^{n+m} \quad \frac{x^n}{x^m} = x^{n-m} \quad (x^n)^m = x^{n \cdot m}$
Simple Growth and Decay Formula	$A = P(1 \pm r)^t$
Periodic Compounding Formula	$A = P(1 + \frac{r}{n})^{nt}$
Continuous Compounding Formula	$A = Pe^{rt}$

P = what you start with

r = interest rate in decimal form

t = time in years

n = # interest payments in 1 year

$$f(x) = a \log_b(x-h) + k$$

THE Relationship between Logarithms and Exponential Functions	
$b^x = Y \quad \Longleftrightarrow \quad \log_b Y = X$	
Properties of Logarithms	
$\log(m \cdot n) = \log m + \log n$	
$\log(\frac{m}{n}) = \log m - \log n$	
$\log m^n = n \log m$	
Change of Base Formula	
$\log_b m = \dfrac{\log m}{\log b}$	

Make sure the <u>Exponential</u> and <u>Logarithmic</u> page of your formula book has the following items completed.

NORMAL CURVE PERCENTAGES

34

34

13.5

13.5

2.35

2.35

0.15

0.15

-3   -2   -1   0   1   2   3

68%

95%

99.7 %

Mean
written as $\bar{X}$ or μ, average

Standard Deviation
$\sigma = \sqrt{\dfrac{\Sigma(x-\bar{x})}{n}}$ note square root of variance = standard deviation

z-Score
$z = \dfrac{x-\bar{x}}{\sigma}$

Make sure the Statistics page of your formula book has the following items completed.

Find Standard Deviation
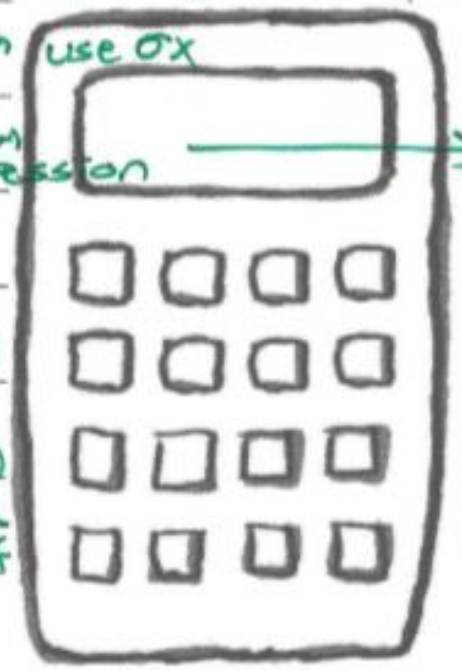① STAT EDIT → ENTER DATA use σx
② STAT CALC 1 VAR STATS

Create quadratic and cubic models
① STAT EDIT → ENTER DATA
② STAT CALC → select regression

Find intersection of two functions
2nd TRACE 5

Change Log Base
MATH A (not on all calcs)

Calculate Summations
MATH 0 (not on all calcs)

Other Area under normal curve
2nd VARS 2 normalcdf

lower
upper
μ
σ

remember
infinity is ±1E99

don't forget to
use VARS TO
put equation in
Y₁

Make sure the <u>Calculator Tips</u> page of your formula book has the following items completed.