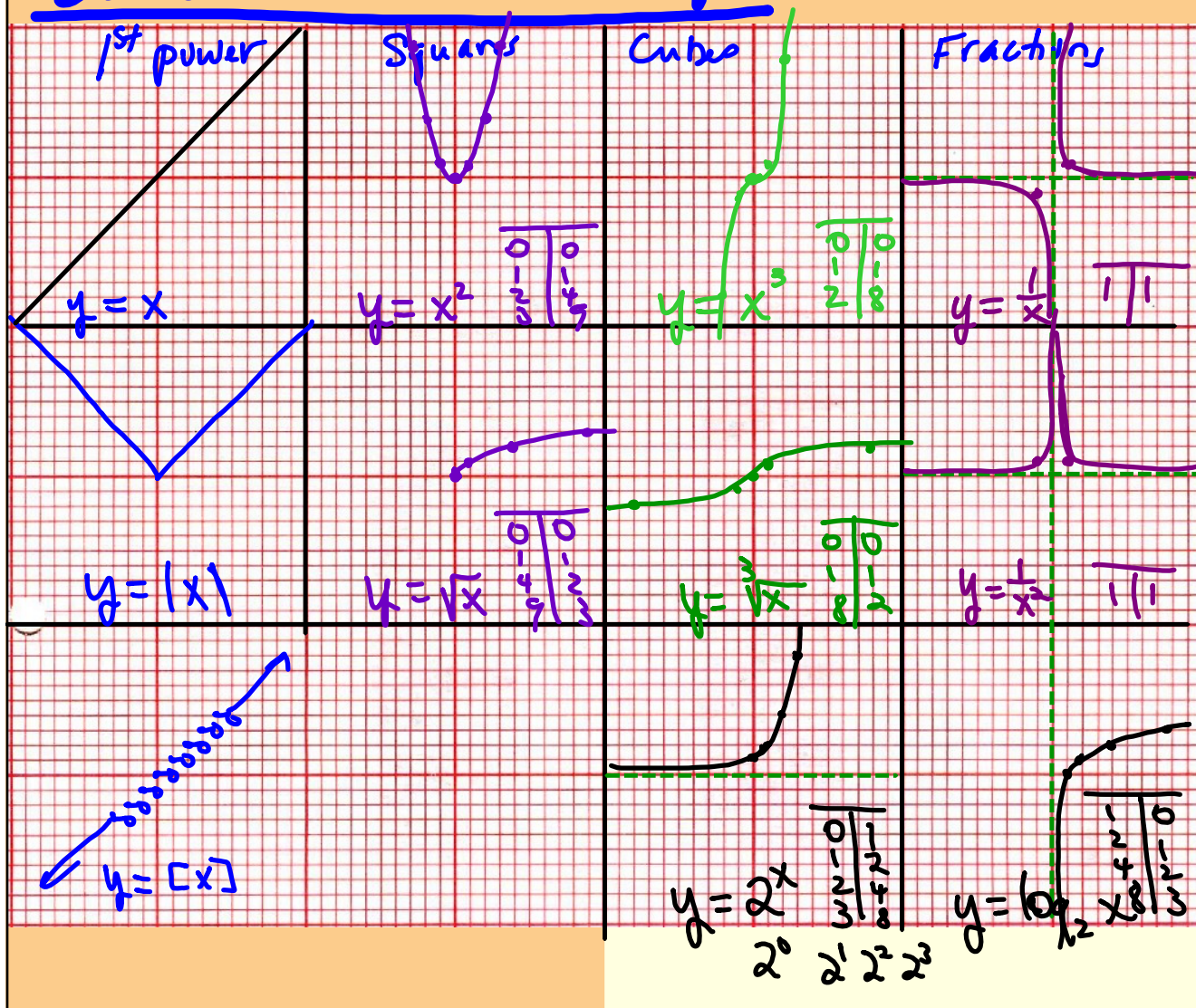


SEMESTER REVIEW DAY 2



SEM. 2 REVIEW - DAY 2

Can use:

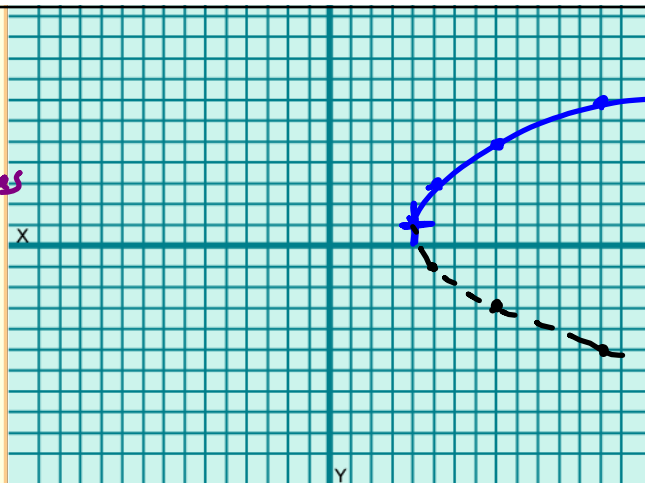
- * Pink sheet
- * Normal curve table

Will give:
Exp/Log
formulas
Seg formulas

$$y = 2\sqrt{x-4} + 1$$

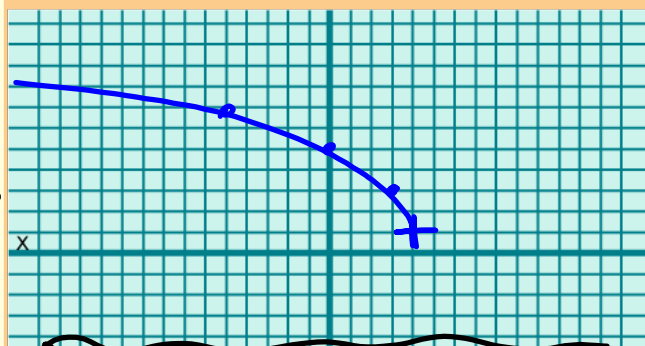
↑
Right
4
up
1

0	0
1	2
4	4
9	6



$$y = -2\sqrt{x-4} + 1$$

0	0
1	2
4	4
9	6



$$y = 2\sqrt{4-x} + 1$$

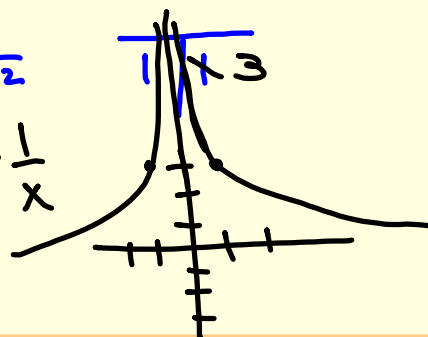
$$y = 2\sqrt{-(x-4)}$$

Right 4

0	0
1	2
4	4
9	6

$$y = \frac{3}{x^2}$$

$$y = 3 \cdot \frac{1}{x}$$



RATIONAL FUNCTIONS

SIMPLIFY

Factor & Cancel Mult./Div $\frac{3}{4} \cdot \frac{8}{9}$

$$\frac{x^2-4}{x^2+3x-10} \cdot \frac{-(x^2-25)^2}{x^3-8} = \frac{(x+2)(x-2)}{(x+5)(x-2)} \cdot \frac{-(x+5)(x-5)}{(x-2)(x^2+2x+4)}$$

* Div - Keep-change-flip $= \frac{-(x+2)(x-5)}{(x-2)(x^2+2x+4)}$

Addition/Subtraction = Common Denom.

$$\begin{aligned} x \cdot \frac{2x+3}{x^2-16} + \frac{(x+1)(x+4)}{x^2-1x} &= \frac{2x^2+3x+x^2+4x+x+4}{x(x+4)(x-4)} \\ x \cdot \frac{(x+4)(x-4)}{x(x-4)(x+4)} &= \frac{3x^2+8x+4}{x(x+4)(x-4)} \end{aligned}$$

Multiply by common denom

$$\frac{6}{x-3} = \frac{8x^2}{x^2-9} - \frac{4x}{x+3}$$

$$\frac{(x+3)}{(x+3)} \left[\frac{6}{x-3} = \frac{8x^2}{(x+3)(x-3)} - \frac{4x}{x+3} \right]$$

Solve.

Excluded values
 $x \neq 3, -3$

$$\begin{aligned} 6(x+3) &= 8x^2 - 4x(x-3) \\ 6x+18 &= 8x^2 - 4x^2 + 12x \\ 6x+18 &= 4x^2 + 12x \\ 0 &= 4x^2 + 6x - 18 \\ 0 &= 2(2x^2 + 3x - 9) \end{aligned}$$

$$\begin{aligned} 2(2x-3)(x+3) &= 0 \\ 2x-3 &= 0 \quad x+3 = 0 \\ x &= 3/2 \quad x = -3 \end{aligned}$$

D / R = T

up	20	15-x	$\frac{20}{15-x}$
down	20	15+x	$\frac{20}{15+x}$

Boat = 15 mph

Current = ? x

Go 20 miles upstream & return in 5 hrs.

$$\frac{20}{15-x} + \frac{20}{15+x} = 5$$

EXPONENTIAL FUNCTIONS

21)

$$y = 2^x$$

$$y = 2^{x-4} - 3$$

$$y = -2^{x-4} - 3$$

$$y = 2^{-(x-4)} - 3$$

Logs

$$y = \log_2(x-4) - 3$$

x

y

x

y

LOGARITHMS

Like 30a

$$\left(\frac{1}{16}\right)^{x-2} = \sqrt[3]{2^x}$$

$$\left(\frac{1}{2^4}\right)^{x-2} = 2^{x/3}$$

$$(2^{-4})^{x-2} =$$

$$2^{-4x+8} = 2^{x/3}$$

$$3 \left[-4x+8 = \frac{x}{3} \right]$$

$$\frac{24}{13} = x \quad \begin{array}{l} -12x+24 = x \\ \leftarrow 24 = 13x \end{array}$$

$$2 \log x - \log(x^2 - 10) = 1$$

Make
Common
bases!

$$\ln x = \log_e x$$

$$\log x = \log_{10} x$$

$$\log_5 125 = \log_5 5^3 = 3$$

$$\log_7 \frac{1}{49} = \log_7 7^{-2} = -2$$

$$\ln \sqrt[3]{e^2} = \ln e^{2/3} = 2/3$$

PROPERTIES OF LOGS

$$\log_b m + \log_b n =$$

$$\log_b m - \log_b n =$$

$$\log_b m^p =$$

EXPONENTIATE!

Pop. of Seneca is 2000.
Growing at 2.3% per
year. How many years
to reach 3000 people?

STATS

$\{3, 7, 9, 17\}$

Find st. dev.

- 1) Find mean
- 2) Data - mean
- 3) Square differences
- 4) Find mean of squares
- 5) $\sqrt{\quad}$

Measures of central tend?

Measures of variation?

# of cars	mpg
3	20
5	24
2	28
1	39

Find mean, median + mode $\rightarrow$

Outliers

Med = 72

$Q_1 = 65$

$Q_3 = 77$

Normal Distribution

$Z = \underline{\hspace{2cm}}$



500 H.S. 100 m dash competitors

$\mu = 8.0$ sec $\sigma = 0.4$

How many runners below 7 sec?

Top 25% advance to state
What is slowest time that can
still go to state?

Permutations

All objects:
Part of objects:

Alike:

Special positions
or repeat:

Combinations

CONDITIONAL PROB



PROBABILITY =

ODDS =

COMBINATIONS: 1)
2)
3)

ORDER:

Replacement:

AND

OR:

BINOMIAL

At Least/At Most

What is prob of selecting
Someone who passed?

If a person who failed
is selected, what is prob
he/she took the evil test?