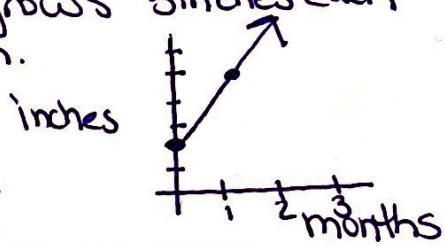
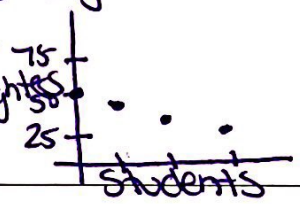
Exponent Rules

Product Rule: $b^2 \cdot b^3 = b^{(2+3)} = b^5$ Add Exponents	**Quotient Rule:** $\frac{b^3}{b^2} = b^{(3-2)} = b^1 = b$ Subtract Exponents
Power Rule: $(b^3)^2 = b^{(3 \cdot 2)} = b^6$ Power to Power - Multiply Exponents	**Zero Power:** $b^0 = 1$ Anything to the zero power is 1.
Negative Exponents: $b^{-2} = \frac{1}{b^2}$ $\frac{1}{b^{-3}} = b^3$ Flip over fraction bar	

Discrete and Continuous Functions

Continuous	Discrete
- measured / happens all of the time. Ex: A plant starts at 2 inches and grows 3 inches each month.  $y = 3x + 2$ $y = 2 + 3x$	- Counted / happens and stops Ex: ~~Bobo has $10 and gets $5~~ Ex: Ms. Mendoza has 50 highlighters. She gives each student two.  $y = 50 - 2x$ $y = -2x + 50$

Linear and Exponential Functions

Linear	Exponential
Slope Intercept: $y = mx + b$ ↑ slope ↑ y-int. Point Slope: $y = m(x - x_1) + y_1$ ↑ slope ↑ adjustment ↑ start	$y = ab^x$ ↑ (start)(ratio)^x Growth - 100% + 3% = 103% ~~So~~ Decay - 100% - 3% = 97%