Warm-Up: Tuesday 1/30/18

① $x^4 \cdot x^3 = x^7$

② $x^{10} \cdot x^{13} = x^{23}$

③ $\frac{n^5}{n^2} = n^3$

④ $\frac{x^{15}}{x^{11}} = x^4$

Lesson 1.3: Growing, Growing Dots

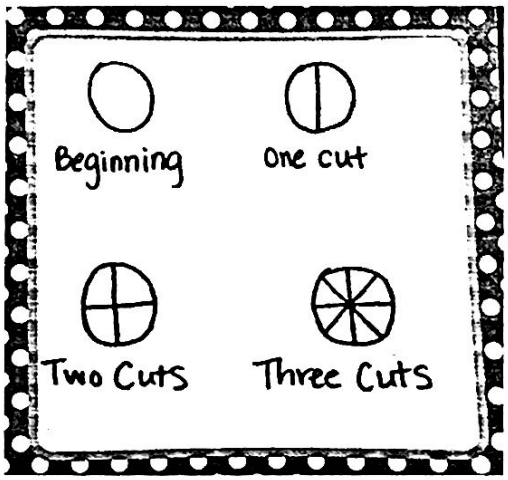
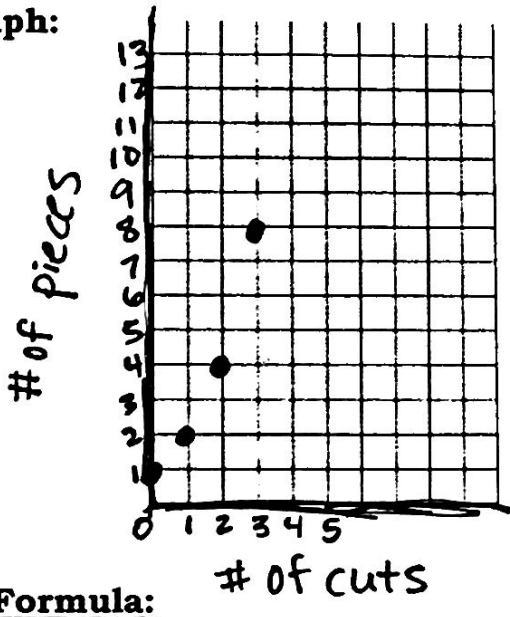


Table:

# of Cuts	Number of Pieces
0	1
1	2
2	4
3	8
4	16

x2
x2
x2

Graph:



Recursive Formula:

$f(n) = f(n-1) \times 2$

Explicit Formula:

$y = 1 \cdot 2^x$

$f(n) = 1 \cdot 2^n$

	Explicit Equation	Recursive Equation
Type of thinking represented	Process that relates the input, x, with the output, y. In other words, the explicit equation can tell me "how many dots" there will be when I know the time.	How do I get from one term to the next? What is the pattern?
Example without notation	$y = 3x + 6$ OR $y = 3 \cdot 2^x$	current = previous + 3
Example using function notation	$f(n) = 3n + 6$	$f(n) = f(n-1) + 3$
Using a table	x | y →	x | y ↘ ↘
Evaluating using function notation	x | y 0 | 6 1 | 9 2 | 12 ✓ 3 | 15 $f(2) = 3(2) + 6$ $f(2) = 6 + 6 = 12$	n | f(n) 0 | 6 1 | 9 2 | 12 ✓ 3 | 15 $f(2) = f(2-1) + 3$ $= f(1) + 3$ $f(2) = 9 + 3 = 12$
Advantages	Find the 100th term easily	Very quickly find the NEXT term