DO NOW

1) Given the geometric sequence 3, 15, 75, 325, ...

What is:

a) t_1= _____ r = _____

b) the **recursive** formula: _____ and _____

c) the next three terms ____, ____, ____

d) the **explicit** formula: _____

d) the twentieth term (aka t_{20}):

2) Given a geometric sequence defined by the recursive formula $\mathbf{t_1 = 8}$, **and** $\mathbf{t_n = 3(t_{n-1})}$, What is:

a) r = _____

b) The explicit formula? _____

c) The fifth term of the sequence:

Geometric Sequence Explicit Formula:

t_n = _____

Since we will be using exponents in this formula, it is important to learn some basic rules of exponents:

Perform any operation indicated and simplify each expression below.
(*5,6,9 you have never seen before, so skip them and we'll come back to them!)

1. $2x \cdot 3y =$

2. $2x + 3y =$

3. $(2x + 3y)^2 =$

4. $(2x)^3 =$

*5. $5x^{-3}$

*6. $(5x)^{-3}$

7. $(3x - 5) - (2x - 1) =$

8. $(3x - 5)(2x - 1)$

*9. $(23x^{11} \cdot 17x^{14})^0 =$

Objective: evaluate and simplify expressions with negative exponents

a^x

$4^6 =$ _____

Fill in the charts below:

$2^4 =$	$3^4 =$
$2^3 =$	$3^3 =$
$2^2 =$	$3^2 =$
$2^1 =$	$3^1 =$
$2^0 =$	$3^0 =$
$2^{-1} =$	$3^{-1} =$
$2^{-2} =$	$3^{-2} =$
$2^{-3} =$	$3^{-3} =$
$2^{-4} =$	$3^{-4} =$

Generalize:

ZERO Exponents:

$x^0 =$

ex) $(237x^4y^{92})^0 =$

NEGATIVE Exponents:

ex) $2^{-n} =$

ex) $x^{-y} =$

ex) $y^{-2} =$

Try the following:

a) $2^x = 8$

b) $3^y = \frac{1}{9}$

c) $2^{2x} = 16$

d) $\left(\frac{1}{x}\right)^{-1} =$

e) $4^j = 64$

f) $5^t = \frac{1}{5}$

g) $\left(\frac{-2}{3}\right)^{-2} =$

h) $987{,}654^x = 1$

i) $987{,}654^{(4t-36)} = 1$

*Lets try # 5, 6, 9 on p. 2 now!

Homework: p. 99 #19-30
p. 717-718 #15, 16, 35, 39, 49, 51