Starter

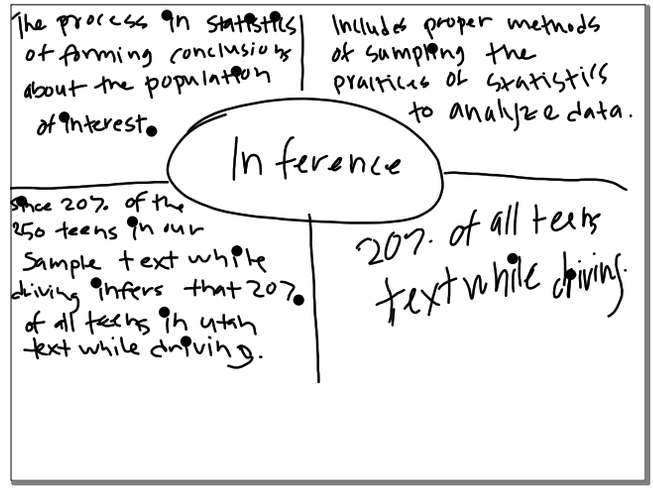
Homework Questions

Calendar Math

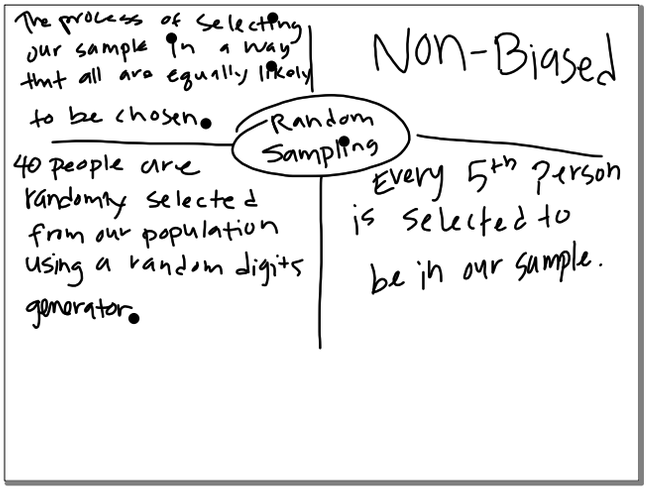
1.4 Binomial Theorem

HW 1.4 Binomial Theorem Worksheet

Aug 31-2:46 PM



Sep 1-9:51 AM



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Homework Questions...

21) $3m^4 - 30m^2$

$3m^2(m^2 - 10)$

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$x^3 - 36x$

$x(x^2 - 36)$

$x(x-6)(x+6)$

$(x+6)(x-6)$

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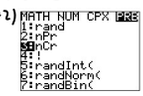
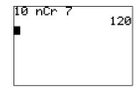
Binomial Theorem: a formula for finding any power of a binomial without multiplying at length. $(x+2)(x+2)(x+2)(x+2)(x+2)$

$(x+2)^5$



Calculator: nCr or n choose r



Pascal's Triangle: is a triangle of numbers where each number is the two numbers above it added together (except for the edges, which are all "1").

4) 1 4 6 4 1

5) 1 5 10 10 5 1

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$(a+b)^0 = 1$

$(a+b)^1 = a+b$

$(a+b)^2 = a^2 + 2ab + b^2$

$(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$

$(a+b)^4 = a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4$

$(a+b)^5 = a^5 + 5a^4b + 10a^3b^2 + 10a^2b^3 + 5ab^4 + b^5$

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Examples

1) $(x+4)^4$

$a: x$

$b: 4$

$a^4 \cdot x^4$

$4a^3b \cdot 4(x)^3(4) = 16x^3$

$6a^2b^2 \cdot 6(x^2)(16) = 96x^2$

$4ab^3 \cdot 4(x)(64) = 256x$

$b^4 \cdot 256$

x^4	$16x^3$	$96x^2$
$256x$	256	

$x^4 + 16x^3 + 96x^2 + 256x + 256$

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Homework

5) $(2n^4 - 1)^5$

$a: 2n^4$

$b: -1$

$a^5 \cdot (2n^4)^5 = 32n^{20}$

$5a^4b \cdot 5(2n^4)^4 \cdot (-1) = 5(16n^{16})(-1) = -80n^{16}$

$10a^3b^2 \cdot 10(2n^4)^3(-1)^2 = 10(8n^{12}) = 80n^{12}$

$10a^2b^3 \cdot 10(2n^4)^2(-1)^3 = -10(4n^8) = -40n^8$

$5ab^4 \cdot 5(2n^4)(-1)^4 = 5(2n^4) = 10n^4$

$b^5 \cdot (-1)^5 = -1$

$32n^{20} - 80n^{16} + 80n^{12} - 40n^8 + 10n^4 - 1$

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$(5x+1)^2$

$a: 5x$

$b: 1$

$1 \cdot a^2 : (5x)^2 = 25x^2$

$2ab : 2(5x)(1) = 10x$

$1b^2 \cdot (1)^2 = 1$

$25x^2 + 10x + 1$

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find coef of mn — coef of ab

$(9m+3n)^2$

$2ab \cdot 2(9m)(3n) = 18m(3n) = 54mn$

$a: 9m$

$b: 3n$

54

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7) C. of y $(y-2)^3$

$3ab^2 \cdot 3(y)(-2)^2 = 3(y)(4) = 12y$

$a: y$

$b: -2$

12

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