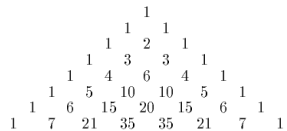


Common Core State Standards for Mathematics

Domain: Arithmetic with Polynomials and Rational Expressions

Polynomial Identities (A-APR.4-5)

High School

		Example Activities
Score 4.0	In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard. The student will:	<p><u>Binomial Theorem Pattern Prediction</u> – Students will work with a partner to describe the patter of the binomial theorem using Pascal’s Triangle as a guide. Students will be given the first two steps of the expansion and Pascal’s Triangle. They will be tasked with completing the expansion to n=7 and then to determine the general form of the theorem.</p>  <p> $(x + y)^2 = x^2 + 2xy + y^2.$ $(x + y)^3 = x^3 + 3x^2y + 3xy^2 + y^3,$ $(x + y)^4 = x^4 + 4x^3y + 6x^2y^2 + 4xy^3 + y^4,$ $(x + y)^5 = x^5 + 5x^4y + 10x^3y^2 + 10x^2y^3 + 5xy^4 + y^5,$ $(x + y)^6 = x^6 + 6x^5y + 15x^4y^2 + 20x^3y^3 + 15x^2y^4 + 6xy^5 + y^6,$ $(x + y)^7 = x^7 + 7x^6y + 21x^5y^2 + 35x^4y^3 + 35x^3y^4 + 21x^2y^5 + 7xy^6 + y^7.$ </p>
	<ul style="list-style-type: none"> know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal’s Triangle. (A-APR.5) 	
3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	The student will:	<p><u>Proofing Maps</u> – Students will work in groups of three. Each group will be given the polynomial identity to be proven as well as the correct conclusion to each proof. The groups will be given paper strips containing the steps to each proof. The steps will be mixed up and out of order. The first task for each group is to correctly place and order each step to each proof. Once the teacher has verified the accuracy of each proof, every student will be required to write an explanation of each proof to be submitted for feedback.</p>
	<ul style="list-style-type: none"> prove polynomial identities (A-APR.4) use polynomial identities to describe numerical relationships (A-APR.4) <p>The student exhibits no major errors or omissions.</p>	
2.5	No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	
Score 2.0	There are no major errors or omissions regarding the simpler details and processes as the student will:	
	<ul style="list-style-type: none"> recognize or recall specific vocabulary, such as: <ul style="list-style-type: none"> ○ perform basic processes, such as: <ul style="list-style-type: none"> ○ 	

	However, the student exhibits major errors or omissions regarding the more complex ideas and processes.		
	1.5	Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
Score 1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.		
	0.5	With help, a partial understanding of the 2.0 content but not the 3.0 content	
Score 0.0	Even with help, no understanding or skill demonstrated.		