Bellwork Alg 2A Tuesday, May 9, 2019

Expand each. Simplify terms and write answer in Standard Form when there is only one variable.

1. $(x+3)^6$

2. $(2P-Q)^8$

3. $(4R-5T)^5$

4. Find the 4th term of the polynomial created by expanding $(3a-2b)^9$

Bellwork Alg 2A Tuesday, May 9, 2019 Answers

Expand each. Simplify terms and write answer in Standard Form when there is only one variable.

1. $(x+3)^6$ Row 6

$= x^6 + 6x^5 3 + 15x^4 3^2 + 20x^3 3^3 + 15x^2 3^4 + 6x 3^5 + 3^6$

$= x^6 + 18x^5 + 135x^4 + 540x^3 + 1215x^2 + 1458x + 729$

2. $(2P-Q)^8$ Row 8

$= (2p)^8 - 8(2p)^7 q + 28(2p)^6 q^2 - 56(2p)^5 q^3 + 70(2p)^4 q^4 - 56(2p)^3 q^5 + 28(2p)^2 q^6 - 8(2p)q^7 + q^8$

$= 256p^8 - 1024p^7 q + 1792p^6 q^2 - 1792p^5 q^3 + 1120p^4 q^4 - 448p^3 q^5 + 112p^2 q^6 - 16pq^7 + q^8$

3. $(4R-5T)^5$ Row 5

$= (4R)^5 - 5(4R)^4(5T) + 10(4R)^3(5T)^2 - 10(4R)^2(5T)^3 + 5(4R)(5T)^4 - (5T)^5$

$= 1024R^5 - 6400R^4T + 16000R^3T^2 - 20000R^2T^3 + 12500RT^4 - 3125T^5$

4. Find the 4th term of the polynomial created by expanding $(3a-2b)^9$

Row 9

1 9 36 84

$(3a)^9$ $(3a)^8$ $(3a)^7$ $(3a)^6$

+ − + −

4th term

$-84(3a)^6(2b)^3 = -489{,}888a^6b^3$