

NAME: _____

P.I. A2.A.36: Apply the binomial theorem to expand a binomial and determine a specific term of a binomial expansion

Expand:

1. $(3a - b)^4$

[A] $81a^4 - 108a^3b + 54a^2b^2 - 12ab^3 + b^4$

[B] $81a^4 + 12a^3b + 18a^2b^2 + 12ab^3 + b^4$

[C] $81a^4 + 108a^3b + 54a^2b^2 + 12ab^3 + b^4$

[D] $81a^4 - 12a^3b + 18a^2b^2 - 12ab^3 + b^4$

2. $(a - 4b)^4$

[A] $a^4 + 16a^3b + 24a^2b^2 + 16ab^3 + 256b^4$

[B] $a^4 - 16a^3b + 24a^2b^2 - 16ab^3 + 256b^4$

[C] $a^4 + 16a^3b + 96a^2b^2 + 256ab^3 + 256b^4$

[D] $a^4 - 16a^3b + 96a^2b^2 - 256ab^3 + 256b^4$

3. $(4a - b)^4$

[A] $256a^4 + 256a^3b + 96a^2b^2 + 16ab^3 + b^4$

[B] $256a^4 + 16a^3b + 24a^2b^2 + 16ab^3 + b^4$

[C] $256a^4 - 16a^3b + 24a^2b^2 - 16ab^3 + b^4$

[D] $256a^4 - 256a^3b + 96a^2b^2 - 16ab^3 + b^4$

4. $(a - 3b)^4$

[A] $a^4 - 12a^3b + 54a^2b^2 - 108ab^3 + 81b^4$

[B] $a^4 + 12a^3b + 18a^2b^2 + 12ab^3 + 81b^4$

[C] $a^4 + 12a^3b + 54a^2b^2 + 108ab^3 + 81b^4$

[D] $a^4 - 12a^3b + 18a^2b^2 - 12ab^3 + 81b^4$

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Expand:

5. $(2a - b)^4$

[A] $16a^4 - 32a^3b + 24a^2b^2 - 8ab^3 + b^4$

[B] $16a^4 + 8a^3b + 12a^2b^2 + 8ab^3 + b^4$

[C] $16a^4 - 8a^3b + 12a^2b^2 - 8ab^3 + b^4$

[D] $16a^4 + 32a^3b + 24a^2b^2 + 8ab^3 + b^4$

8. Use Pascal's Triangle to expand $(e - 3f)^3$.

9. Use Pascal's Triangle to expand $(s - 2t)^3$.

6. Use Pascal's Triangle to expand $(j - 3k)^3$.

10. Use Pascal's Triangle to expand $(p + 3q)^3$.

7. Use Pascal's Triangle to expand $(q + 4r)^3$.

[1] A

[2] D

[3] D

[4] A

[5] A

[6] $j^3 - 9j^2k + 27jk^2 - 27k^3$

[7] $q^3 + 12q^2r + 48qr^2 + 64r^3$

[8] $e^3 - 9e^2f + 27ef^2 - 27f^3$

[9] $s^3 - 6s^2t + 12st^2 - 8t^3$

[10] $p^3 + 9p^2q + 27pq^2 + 27q^3$