Exercise

1. Use the binomial theorem to expand $(a+b)^4$.
2. Use the binomial theorem to expand $(x+1)^5$.
3. Use the binomial theorem to expand $(x-1)^4$.
4. Use the binomial theorem to expand $(x-2)^4$.
5. Use the binomial theorem to find the 6th term in the expansion of $(a+b)^8$. (You can do this *without* writing all the terms of of $(a+b)^8$. Think about the exponent on y in the 6th term.)
6. Use the binomial theorem to find the 6th term in the expansion of $(x-1)^8$.

Answers to Exercise

(**1**) $a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4$
(**2**) $x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1$.
(**3**) $x^6 - 6x^5 + 15x^4 - 20x^3 + 15x^2 - 6x + 1$.
(**4**) $x^4 - 8x^3 + 24x^2 - 32x + 16$.
(**5**) $56a^3b^5$.
(**6**) $-56x^3$.