In general, we have the following formula.
The Binomial Theorem

If k is a positive intiger, then

$$
\begin{aligned}
(a+b)^k = a^k + ka^{k-1}b + \frac{k(k-1)}{1\cdot 2}a^{k-2}b^2 \\
+\frac{k(k-1)(k-2)}{1\cdot 2\cdot 3}a^{k-3}b^3 + ... \\
+\frac{k(k-1)...(k-n+1)}{1\cdot 2\cdot 3...\cdot n}a^{k-n}b^n \\
+... + kab^{k-1} + b^k
\end{aligned}
$$

Or Summarized

$$(a+b)^k = \sum_{n=0}^{n} \binom{n}{k} a^{n-k} \cdot b^k$$

Example 13 Expand $(x - 2^5)$
Solution Using the Binomial Theorem with $a = x, b = -2, k = 5$, we have

$$
\begin{aligned}
(x-2)^5 &= x^5 + 5x^4(-2) + \frac{5\cdot 4}{1\cdot 2}x^3(-2)^2 + \frac{5\cdot 4\cdot 3}{1\cdot 2\cdot 3}x^2(-2)^3 + 5x(-2)^4 + (-2)^5 \\
&= x^5 - 10x^4 + 40x^3 - 80x^2 + 80x - 32
\end{aligned}
$$