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| **Sqrt in C++** | |
| #include <iostream>  using namespace std;  int sqrt(int x) {  if (x == 0 || x == 1) {  return x;  }  int low = 1, high = x, ans = 0;  while (low <= high) {  int mid = low + (high - low) / 2;  long long mSqr = (long long) mid \* mid; // Use long long to avoid integer overflow  if (mSqr == x) {  return mid;  } else if (mSqr > x) {  high = mid - 1;  } else {  low = mid + 1;  ans = mid;  }  }  return ans;  }  int main() {  cout << sqrt(37) << endl;  return 0;  } | Dry Run Table:  | **Iteration** | **low** | **high** | **mid** | **mid\*mid** | **ans** | **Action** | | --- | --- | --- | --- | --- | --- | --- | | 1 | 1 | 37 | 19 | 361 | 0 | 361 > 37 → high = mid - 1 = 18 | | 2 | 1 | 18 | 9 | 81 | 0 | 81 > 37 → high = mid - 1 = 8 | | 3 | 1 | 8 | 4 | 16 | 0 | 16 < 37 → ans = 4, low = mid + 1 = 5 | | 4 | 5 | 8 | 6 | 36 | 4 | 36 < 37 → ans = 6, low = mid + 1 = 7 | | 5 | 7 | 8 | 7 | 49 | 6 | 49 > 37 → high = mid - 1 = 6 | | **End** | 7 | 6 | - | - | 6 | Loop ends since low > high |  ✅ Final Result: 6 |
| 6 | |