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2.

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2b and 3.

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6. //Discrete Math Homework 1

#include <iostream>

#include <vector>

#include <algorithm>

std::vector<int> unionSet(const std::vector<int>& A, const std::vector<int>& B) {

std::vector<int> result = A;

for (int element : B) {

if (std::find(result.begin(), result.end(), element) == result.end()) {

result.push\_back(element);

}

}

return result;

}

std::vector<int> intersectionSet(const std::vector<int>& A, const std::vector<int>& B) {

std::vector<int> result;

for (int element : A) {

if (std::find(B.begin(), B.end(), element) != B.end()) {

result.push\_back(element);

}

}

return result;

}

std::vector<int> setDifference(const std::vector<int>& A, const std::vector<int>& B) {

std::vector<int> result;

for (int element : A) {

if (std::find(B.begin(), B.end(), element) == B.end()) {

result.push\_back(element);

}

}

return result;

}

int main(){

std::vector<int> A = {4, 6, 7, 8, 9, 12, 1, 3, 9, 77};

std::vector<int> B = {3, 5, 22, 10, 8, 7, 6, 69, 4, 1};

std::vector<int> resultUnion = unionSet(A, B);

std::cout << "A U B: {";

for(int element: resultUnion){

std:: cout << element << " ";

}

std::cout << "}" << std:: endl;

std::vector<int> resultIntersect = intersectionSet(A, B);

std::cout << "A n B: {";

for(int element: resultIntersect){

std::cout << element << " ";

}

std::cout << "}" << std::endl;

std::vector<int> difference = setDifference(A, B);

std::cout << "A - B: {";

for(int element: difference){

std::cout << element << " "; }

std::cout << "}" << std::endl;

return 0;

}