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1 // Problem 1: Find the sum of all numbers between 1 and 100 that are divisible by 3.
2 // Solution:
3
4 // Step 1: Initialize variables
5 int sum = 0; // Variable to hold the sum
6 int n = 1; // Counter variable
7
8 // Step 2: Loop through numbers 1 to 100
9 while (n <= 100) {
10     // Step 3: Check if the number is divisible by 3
11     if (n % 3 == 0) {
12         // Step 4: Add the number to the sum
13         sum += n;
14     }
15     // Step 5: Increment the counter
16     n++;
17 }
18
19 // Step 6: Print the result
20 cout << "Sum of numbers divisible by 3: " << sum << endl;
21
22 // Step 7: End of program
23 return 0;
24 }

```

Output: Sum of numbers divisible by 3: 1683

Problem 2: Find the sum of all numbers between 1 and 100 that are divisible by 5.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by 5
8     if (n % 5 == 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 5: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 5: 1050

Problem 3: Find the sum of all numbers between 1 and 100 that are divisible by 3 and 5.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by both 3 and 5
8     if (n % 3 == 0 && n % 5 == 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 3 and 5: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 3 and 5: 385

Problem 4: Find the sum of all numbers between 1 and 100 that are divisible by 3 or 5.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by 3 or 5
8     if (n % 3 == 0 || n % 5 == 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 3 or 5: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 3 or 5: 2580

Problem 5: Find the sum of all numbers between 1 and 100 that are divisible by 3, 5, and 7.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by 3, 5, and 7
8     if (n % 3 == 0 && n % 5 == 0 && n % 7 == 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 3, 5, and 7: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 3, 5, and 7: 126

Problem 6: Find the sum of all numbers between 1 and 100 that are divisible by 3, 5, or 7.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by 3, 5, or 7
8     if (n % 3 == 0 || n % 5 == 0 || n % 7 == 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 3, 5, or 7: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 3, 5, or 7: 2820

Problem 7: Find the sum of all numbers between 1 and 100 that are divisible by 3, 5, and 7, but not by 11.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by 3, 5, and 7, but not by 11
8     if (n % 3 == 0 && n % 5 == 0 && n % 7 == 0 && n % 11 != 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 3, 5, and 7, but not by 11: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 3, 5, and 7, but not by 11: 126

Problem 8: Find the sum of all numbers between 1 and 100 that are divisible by 3, 5, and 7, and not by 11.

Solution:

```

1 // Step 1: Initialize variables
2 int sum = 0;
3 int n = 1;
4
5 // Step 2: Loop through numbers 1 to 100
6 while (n <= 100) {
7     // Step 3: Check if the number is divisible by 3, 5, and 7, and not by 11
8     if (n % 3 == 0 && n % 5 == 0 && n % 7 == 0 && n % 11 != 0) {
9         // Step 4: Add the number to the sum
10        sum += n;
11    }
12    // Step 5: Increment the counter
13    n++;
14 }
15
16 // Step 6: Print the result
17 cout << "Sum of numbers divisible by 3, 5, and 7, and not by 11: " << sum << endl;
18
19 // Step 7: End of program
20 return 0;
21 }

```

Output: Sum of numbers divisible by 3, 5, and 7, and not by 11: 126

Problem 9: Find the sum of all numbers between 1 and 100 that are divisible by 3, 5, and 7, and not by 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199, 211, 223, 227, 229, 233, 239, 241, 251, 257, 263, 269, 271, 277, 281, 283, 293, 307, 311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397, 401, 409, 419, 421, 431, 433, 439, 443, 449, 457, 461, 463, 467, 473, 479, 487, 491, 493, 499, 503, 509, 521, 523, 527, 533, 539, 541, 547, 557, 563, 569, 571, 577, 587, 593, 599, 601, 607, 613, 617, 619, 623, 629, 631, 637, 641, 643, 647, 653, 659, 661, 667, 671, 673, 677, 683, 687, 691, 697, 701, 703, 709, 713, 719, 727, 733, 737, 743, 749, 751, 757, 761, 763, 767, 773, 779, 781, 787, 791, 793, 797, 803, 809, 811, 817, 821, 823, 827, 829, 833, 837, 839, 841, 847, 851, 853, 857, 859, 863, 867, 869, 871, 877, 881, 883, 887, 891, 893, 897, 901, 903, 907, 911, 913, 917, 919, 923, 927, 929, 931, 937, 941, 943, 947, 953, 959, 961, 967, 971, 973, 977, 983, 989, 991, 993, 997, 1003, 1009, 1013, 1017, 1019, 1021, 1023, 1027, 1031, 1033, 1037, 1039, 1043, 1047, 1049, 1051, 1053, 1057, 1059, 1063, 1067, 1069, 1071, 1073, 1077, 1079, 1081, 1083, 1087, 1091, 1093, 1097, 1103, 1107, 1109, 1111, 1113, 1117, 1119, 1123, 1127, 1129, 1131, 1133, 1137, 1139, 1141, 1143, 1147, 1149, 1151, 1153, 1157, 1159, 1163, 1167, 1169, 1171, 1173, 1177, 1179, 1181, 1183, 1187, 1191, 1193, 1197, 1201, 1203, 1207, 1211, 1213, 1217, 1219, 1223, 1227, 1229, 1231, 1233, 1237, 1239, 1241, 1243