**Take Home: Quiz 5 (15 pts) – Pointers/Output Parameters**

1. (11 pts) Write a function dispense\_bills(). The function determines the *minimum* number of bills to dispense given a *withdrawal* amount. The possible bills dispensed include: 100’s, 50’s, 20’s, and 10’s. The number of each bill to dispense should be stored indirectly through the pointers: hundreds\_ptr, fifties\_ptr, twenties\_ptr, and tens\_ptr. If the withdrawal\_amount exceeds the balance, then the number of each bill to dispense should be set to 0, and 0 should be returned. If the withdrawal\_amount is less than or equal to the balance, then the number of each bill to dispense should be calculated, and 1 should be returned. The function header has been provided for you.

// precondition: withdrawal amount must be a multiple of 10

// return: 1 if the balance >= withdrawal\_amount; 0 otherwise

int dispense\_bills(double balance, double withdrawal\_amount,

int \*hundreds\_ptr, int \*fifties\_ptr, int \*twenties\_ptr,

int \*tens\_ptr)

{

int result = 0;

int withdraw = (int)withdrawal\_amount;

if (withdraw % 10 == 0) {

if (balance >= withdraw) {

while (withdraw % 100 >= 50) {

\*fifties\_ptr += 1;

withdraw -= 50;

}

while (withdraw % 100 >= 20) {

\*twenties\_ptr += 1;

withdraw -= 20;

}

while (withdraw % 100 >= 10) {

\*tens\_ptr += 1;

withdraw -= 10;

}

\*hundreds\_ptr = withdraw / 100;

result = 1;

}

else {

\*hundreds\_ptr = 0;

\*fifties\_ptr = 0;

\*twenties\_ptr = 0;

\*tens\_ptr = 0;

}

}

return result;

}

1. (4 pts) Given the following declarations and statements, write an appropriate function call for the function implemented above. The value returned from the function should be stored in variable result.

double balance = 0.0, withdrawal\_amount = 0.0;

int hundreds = 0, fifties = 0, twenties = 0, tens = 0, result = 0;

printf("Enter your bank balance: ");

scanf("%lf", &balance);

printf("Enter the amount to withdraw in multiples of 10s: ");

scanf("%lf", &withdrawal\_amount);

// write the function call below

result = dispense\_bills(balance, withdrawal\_amount, &hundreds, &fifties, &twenties, &tens);