Problem 1. Section 5.1, Exercises 15.
Problem 2. Section 5.1, Exercise 19.
Problem 5. Chapter 5.5, Exercises 2, and 3.
Problem 6. Section 5.6, Exercise 9.
Problem 7. Section 5.6, Exercise 13.
Problem 8. Section 5.6, Exercise 15.
Problem 9. Section 5.8, Exercise 3.
Problem 10.

Turn your program into blackboard by Sunday 6/26 by 11:59 pm
Write a program to randomly deal a 5-card hand, and print out the 5 cards that are dealt to the screen.
The program should prompt the user to enter ‘y’ to deal another hand, ‘n’ to stop dealing and quit the
program.
Each time a hand is dealt, the program should print out the new hand.

Use a char matrix to hold the cards dealt to the hand. The char matrix should have 5 rows, one row for each
of the 5 cards that are dealt to the hand. Each row of the char matrix should contain a string of three
characters indicating the card that was dealt. The string (that is each row of the char matrix) should, of
course, be terminated by a ‘\0’.

There are 52 cards in a deck, four suits (spades, heart, diamonds, clubs). Each suit has 13 cards in it; so
4*13 = 52 cards. In each suit there are the cards 2-10, plus a jack, queen, king, and ace.
So a good system to represent the cards in a deck would be to use two characters to denote the card value
(02-10, Ja, Qu, Ki, Ac) and one letter to denote the suit (SHDC) for (spades, hearts diamonds, clubs). For
example, ace of spades would be “AcS” and 3 of hearts would be “03H”.

A slow way to assign the cards in the deck would be
char deck[52][4];
// assign 0th card to be Ace of Spades
deq[0][0] = ’A’;
deq[0][1] = ’c’;
deq[0][2] = ’S’;
deq[0][3] = ’\0’;
// assign next card to be Jack of Heart
deq[1][0] = ’J’;
deq[1][1] = ’a’;
deq[1][2] = ’H’;
deq[1][3] = ’\0’;

A quick way to assign all the cards to a deck would be
char deck[52][4] ={"AcS","02S","03S","04S","05S","06S","07S","08S","09S","10S","JaS","QuS","KiS","AcH","02H","03H","04H","05H","06H","07H","08H","09H","10H","JaH","QuH","KiH","AcD","02D","03D","04D","05D","06D","07D","08D","09D","10D","JaD","QuD","KiD","AcC","02C","03C","04C","05C","06C","07C","08C","09C","10C","JaC","QuC","KiC"};

i.e. 52 character strings.

You can copy and paste the above statement into your c program to save typing everything.

Very Important:
The 5-card hand that is randomly chosen from the 52-card deck should have no duplications; i.e. the 5-card hand should not contain two of the same card.

Use a subroutine deal() to randomly assign cards from the deck using the rand() function.
Seed the rand() function using the srand() function with the argument being the time
srand((unsigned int)time(NULL));

There is a dummy program below to help you get started and to clarify the correct syntax with which to use a 2-D matrix as a function argument, print, etc..

```c
#include<stdio.h>
#include<stdlib.h>
#include<cstdlib>
#include<time.h>

void deal(char cards[ ][4]);
main()
{
    char hand[5][4];
    int i;
    deal(hand);
    for(i=0; i<5; i++) {printf("%s\n",hand[i]);}
}

void deal(char hand[ ][4])
{
    int i;
    for ( i = 0; i < 5; i++ ) { // assign all 5 cards as being the ace of spades
        hand[i][0] = 'A';
        hand[i][1] = 'c';
        hand[i][2] = 'S';
        hand[i][3] = '0';
    }
}
```