

Frog Jump

Name: _____

1. The Game starts in this position:



[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
x								y

2. The Game ends in this position:



[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]

3. There are two valid moves:

- i. Jump to an empty spot next to you
- ii. Jump over one other frog to an empty spot.



[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
x	x	x		y	x	y	y	y

(a) Which 4 frogs can move now?

.....,,,

(b) Where can the frog in spot 2 move?

4. Which of the following are valid moves with the array shown in question 3?

Move frog? 2	<input type="checkbox"/>
Move to? 3	
Move frog? 4	<input type="checkbox"/>
Move to? 5	

Move frog? 2	<input type="checkbox"/>
Move to? 1	
Move frog? 6	<input type="checkbox"/>
Move to? 8	

Move frog? 8	<input type="checkbox"/>
Move to? 3	
Move frog? 3	<input type="checkbox"/>
Move to? 2	

5. Fill in the code to make the Frog Jump Game.

```
public class FrogJump
{
    public static void main (String args[])
    {
        new FrogJump ();
    }

    //set up the board
    char board[] = {'_', '_', '_', '_', '_', '_', '_', '_', '_'};

    public boolean valid (int pos1, int pos2)
    {
        //pos1 is not a frog, bad move
        if (board [____] == '_')
            return _____;
        //pos2 is not a blank, bad move
        else if (board [____] != '_')
            return _____;
        //pos1 is within one space of pos2, good move
        else if ((pos1 + ____ ) == pos2)
            return _____;
        else if ((pos2 + ____ ) == pos1)
            return _____;
        //pos1 is within two spaces of pos2, good move
        else if ((pos1 + ____ ) == pos2)
            return _____;
        else if ((pos2 + ____ ) == pos1)
            return _____;
        //everything else is bad
        else
            return _____;
    }
}
```

```

public boolean done ()
{ //check each place has the right thing
  if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else if (board [___] != '___')
    return false;
  else
    return true;
}

public FrogJump ()
{
  int moves = 0;
  while (!done ())
  { //print board
    System.out.println ("\nYou have taken " + moves + " moves.\n");
    for (int i = 0 ; i < board._____ ; i++)
      System.out.print ("[" + i + "]");
    System.out.println ();
    for (int i = 0 ; i < _____.length ; i++)
      System.out.print (" " + _____ [___] + " ");

    //ask for positions
    _____ pos1 = IO.inputInt ("\n\n_____");
    _____ pos2 = IO.inputInt ("_____");

    //move again if wrong
    while (!valid (pos1, pos2))
    {
      _____ ("\nError, enter again.");
      pos1 = IO._____ ("_____");
      pos2 = IO._____ ("_____");
    }

    //swap
    char temp = board [_____];
    board [_____] = board [_____];
    board [_____] = temp;
    moves++;
  } //while
} //method
} //class

```

6. Answer the following about the game:

(a) How many people play this game?

.....

(b) What is the type of the board?

.....

(c) How long is the board?

.....

(d) How many lines of code does it take to swap two frogs?

.....

(e) What are the names of the 2 methods?

.....

