ICS 161 – Game Engine Lab – Test #1, Jan. 26, 2015

1. Consider a small program consisting of the following three source files.

   ICS161.h

```
#ifndef ICS161_H
#define ICS161_H

class ICS161
{
public:
	ICS161(int x);

private:
	int theX;
};

#endif
```

   ICS161.cpp

```
#include "ICS161.h"

ICS161::ICS161(int x)
{
	if (x<0)
		theX = -x;
	else
		theX = x;
}
```

   HasTheMain.cpp

```
#include "ICS161.h"

int main(int argc, char **argv)
{
	ICS161* anICS161 = new ICS161(-19);
	return 0;
}
```

   a. Draw a diagram showing how the header files, cpp files, object files, and executable file are related to each other.
   b. Why doesn't HasTheMain.cpp need to #include ICS161.cpp?
   c. What would happen if the #ifndef, #define, and #endif lines were omitted from ICS161.h?
2. Briefly explain the pros and cons of static linking and dynamic linking.
3. In a 2D game, pixels can be drawn on the screen using sprites. Briefly describe three or more other techniques for drawing pixels on the screen in a 2D game.
4. Explain how the flow of control in SpriteDemo.cpp (from homework 3) does and does not correspond to Nystrom's Game Loop pattern.