

CS 371 – Exam Review Problem(s) – RP8 – Out Sept. 29, Due Before Class Oct. 2

1. In class, we learned how to use WebGL's `drawElements` function to render a triangle mesh using an array of vertices and an array of index pointers into the vertex array. Suppose that we have a pyramid with four triangular sides and a square base specified by the vertices:

```
1  var vertices = [  
2      vec3(0.5,0.0,0.5),  
3      vec3(0.5,0.0,-0.5),  
4      vec3(-0.5,0.0,-0.5),  
5      vec3(-0.5,0.0,0.5),  
6      vec3(0.0,0.5,0.0)  
7  ];
```

We wish to render the pyramid using

```
gl.drawElements( gl.TRIANGLES, numVertices, gl.UNSIGNED_BYTE, 0 );
```

Which of the following array of index pointers into the array of vertices will result in the desired rendering?

(a)

```
1  var indices = [  
2      4,3,0,  
3      4,0,2,  
4      4,1,2,  
5      4,2,3,  
6      0,3,2,  
7      0,2,1  
8  ];
```

(b)

```
1  var indices = [  
2      4,3,0,  
3      4,0,2,  
4      4,1,2,  
5      4,2,3,  
6      0,3,2  
7  ];
```

(c)

```
1  var indices = [  
2      4,3,0,  
3      4,0,3,  
4      4,1,2,  
5      4,2,3,  
6      0,3,2,  
7      0,2,1  
8  ];
```

(d)

```
1  var indices = [  
2      4,3,0,  
3      4,0,3,  
4      4,1,2,  
5      4,2,3,  
6      0,3,2,  
7  ];
```

(e)

```
1  var indices = [  
2      4,3,0,  
3      4,0,1,  
4      4,1,2,  
5      4,2,3,  
6      0,3,2,  
7      0,2,1  
8  ];
```