

CS 381 Computer Graphics, Fall 2012
Quiz 4 Solutions

Quiz 4 was given in class on Tuesday, October 9, 2012.

1. [3 pts] Find a unit vector in the direction of the following vector.

$$\begin{pmatrix} 1 \\ 2 \end{pmatrix}$$

The length of this vector is $\sqrt{1^2+2^2}=\sqrt{5}$.

The required unit vector is thus $(1/\sqrt{5})\langle 1,2\rangle=\langle 1/\sqrt{5}, 2/\sqrt{5}\rangle$.

2. [2 pts] GLSL has three qualifiers that C++ does not:

`attribute` `uniform` `varying`

Choose one of these three, **circle it** above, and tell what it means below.

Here are all three.

`attribute`: Per-vertex data communicated from application to vertex shader.

`uniform`: Per-primitive data communicated from application to vertex and fragment shaders.

`varying`: Data communicated from vertex shader to fragment shader. Vertex shader sends value at each vertex. Fragment shader receives interpolated value.