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COSC 77: Computer Graphics
Assignment 5: Technical Implementation

hitSphere: Once the function initializes all of the variables for the quadratic equation in *t*, it sets the *t* value to the negative root initially. If it fell outside the bounds of *minT* and *maxT*, then it set it to the positive root. Then, if the positive root also falls outside the bounds, we return *dummyHit*. Afterwards, the function updates the parameters of hit *h*.

findHit: For each sphere, the function keeps track of the smallest *t* value, updating the hit *h* if it discovers a smaller value, so that it correctly finds the intersecting sphere with the smallest *t* value.

color: For each light within the scene, the function creates a shadow ray from the intersection point to the light source. If the ray does hit an object, then the point is in shadow and the light doesn't contribute to the color. Otherwise, the diffuse component of the lighting equation is added to the final color of the object.