# Blackbox Testing

Blackbox testing has been used to ensure that visual aspects of the game engine work correctly.

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| Test | Summary | Action | Expected Result | Actual Result | Pass |
| 1 | Text labels show the correct letters and sizes. | Use a UI layer with a text component, then run. | Correct text shows in the correct size and font. | Same as expected. | ✓ |
| 2 | Free 2D camera moves and rotates in the expected directions when the right keys are pressed. | Use a UI layer with text, run, and use Q, W, E, A, S, D keys to move and rotate the camera. | Text on screen moves in the opposite direction to the direction the camera would be moving. | Same as expected. | ✓ |
| 3 | Texture component adds a texture to a game object. | Add an object in a layer and add a texture component. | The texture should show on the game object. | Same as expected. | ✓ |
| 4 | Shader with light works. | Use a shader with a phong light on an object in a layer. | The object should look as though a light source is shining on it. | Same as expected. | ✓ |
| 5 | FPS camera works. | Add an FPS camera to a layer. Move it with W, A, S, D and the mouse. | The camera should move with the keyboard keys and rotate when the left mouse button is pressed and the mouse is moved. It should not move in the y axis and it should move as though it is a first-person camera. | Same as expected. | ✓ |
| 6 | Changing between controlling cameras in 2 layers. | Use a UI layer with a 2D camera and a game layer with a 3D camera. Set one to be controlled at the start and not the other. | One camera should be controllable at a time, when the button is pressed the controllable camera changes to the other one. | Same as expected. | ✓ |
| 7 | The oscillate component moves objects up and down. |  |  |  | ✓ |
| 8 | The rotate component allows the player to rotate object with the mouse. |  |  |  | ✓ |
| 9 | The player component makes an object act like a player object, reacting to input and moving. |  |  |  | ✓ |
| 10 | The 3rd person camera follows the player object and has a fixed offset position to the player object. |  |  |  | ✓ |