Explain the following in a few sentences and give an example in your own words (or research the internet to find one. If researched, please cite your source): [2 pts each]

a) World coordinate system

- The world coordinate system is a global reference frame that locates the positions of all game objects in the scene. This is based on the origin of the world. An example would be a game object that is positioned in the world at (5,1,0) it would be 5 units on x axis, 1 on the y axis and 0 on the z axis.

b) Local coordinate system

- The local coordinate system is relative to each game objects own transform. For example, each object has its own space defined, which shows positions and rotations based on the game object's own origin. For example, if an object is rotated, if you want it to move forward it is now based on the object's rotation, not going forward in the world. Like this: transform.Translate(Vector3.forward * speed * Time.deltaTime);

c) Vector3. Also, explain any two vectors in Unity of your choice.

- A vector3 is used to display 3D vectors in space, and they are used to change positions and directions in Unity. One is Vector3.forward which represents the forward direction in Unity, which is (0, 0, 1). Another is Vector3.up which is the upward direction.

d) Rigidbody.AddRelativeForce function

- The Rigidbody.AddRelativeForce method works on a rigidbody that is relative to its local coordinate system. It can be used to move objects in a way that is relative to their orientation. For example, AddRelativeForce(Vector3.forward * 10); will make the object move relative to its current orientation instead of forward in the global coordinate system.

e) Input.GetKey function

- The Input.GetKey method is used to bind a key to a specific input that is being registered in Unity. For example, in our rocket boost project from class we did this to get the spacebar input: Input.GetKey(KeyCode.Space).