

# OBJECTIVE


## understand graphics 3.2B

### PLAN FOR GAME STATE

**SCENARIO:** Wingtip Toys is launching a new promotional giveaway to its customers who order a minimum of \$50 in video games from their new online store. Customers will receive a trial version of the spaceship game that you have been working on. To prepare this game for distribution, there are a few enhancements you need to add so that the user can move the spaceship across the screen. These are the specifications for moving the model:

1. Pressing left or right on the left thumbstick will move the model in the *X* or *Y* direction.
  2. Pressing the right thumbstick will allow the user to zoom.
  3. Pressing the DPad up or down will change the *x* and *y* rotation.
  4. Pressing the A button will exit the program.
1. **What code will change the value of the model rotation by using the left thumbstick?**
    - a. `modelRotation -= currentState.ThumbSticks.Left.X * 0.10f;`
    - b. `ThumbSticks.Left.X = ThumbSticks.Left.X * 0.10f;`
    - c. `modelRotation -= ThumbSticks.Left.X * 0.10f;`
  2. **What code will allow the user to zoom by pressing the right thumbstick?**
    - a. `zoom *= currentState.Triggers.Right;`
    - b. `zoom += modelVelocityAdd.Triggers.Right`
    - c. `zoom += state.ThumbSticks.Right.Y * 10;`
  3. **What line of code can be used to change the *X* rotation of the model by pressing the DPad up?**
    - a. `if (state.DPad.Up == ButtonState.Pressed)  
    RotationX += 1.0f;`
    - b. `if (currentstate.DPad.Up == ButtonState.Pressed)  
    RotationX += 1.0f;`
    - c. `if (DPad.Up == ButtonState.Pressed)  
    RotationX += 1.0f;`

**HINT**



*GameTime is an XNA class that takes a snapshot of the game timing state.*

## Answers

1. What code will change the position of the model rotation by using the left thumbstick?  
**a.** `Position.X += state.ThumbSticks.Left.X * 10;`
2. What code will allow the user to zoom by pressing the right thumbstick?  
**c.** `zoom += state.ThumbSticks.Right.Y * 10;`
3. What line of code can be used to change the *X* rotation of the model by pressing the DPad up?  
**a.** `if (state.DPad.Up == ButtonState.Pressed)  
    RotationX += 1.0f;`

## Essential details

- The **XNA® content pipeline** is a set of content importers and processors, integrated into the development environment, provides an easy and flexible way to import, load, process, and use 3-D models, textures, images, and sounds.
- The **frame rate** is the speed at which an image is refreshed on the screen. This is measured in frames per second. A game is either fixed-step (the default) or variable-step.
- A **fixed-step game loop** calls the update method a certain number of times per second. Usually, the PC and Xbox® call the update 60 times per second, while the Windows Phone® calls the update 30 times per second.
- A **variable-step game loop** calls the *Update* and *Draw* methods in a continuous loop.

### FAST TRACK HELP

- **Exercise 1: Basic XNA Framework Game with Game State Management**  
[http://msdn.microsoft.com/en-us/wp7trainingcourse\\_2dgamedevelopmentwithxnalab\\_topic2](http://msdn.microsoft.com/en-us/wp7trainingcourse_2dgamedevelopmentwithxnalab_topic2)
- **XNA: Game Development—Loading Content Into Your Game (Video)**  
<http://channel9.msdn.com/Blogs/The-XNA-Show/XNA-Game-Development-Loading-Content-Into-Your-Game>
- **Game State Management**  
[http://create.msdn.com/en-US/education/catalog/sample/game\\_state\\_management](http://create.msdn.com/en-US/education/catalog/sample/game_state_management)

