

# Solutions to Quick Check Questions

13

## GUI Objects and Event-Driven Programming

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### 13.1 Placing Buttons on a Frame

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#### Quick Check

1. What is a layout manager? How is it useful?

*A layout manager controls the placement of GUI objects within a container object. Layout managers are useful for reducing the amount of code needed to position components in a GUI application. The designers of the Java language have tried to anticipate some of the more common ways that programmers may wish to place components in a GUI application.*

2. Using the `setBounds` method, position a button 50 pixels wide and 30 pixels high at the location (125, 85).

```
Button button = new Button( );  
button.setBounds( 125, 85, 50, 30 );
```

3. Give two ways to make a frame appear on the screen.

*Use either the `show` or `setVisible` method.*

### 13.2 Handling Events

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No Quick Check Questions.

### 13.3 Placing TextField Objects on a Frame

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#### Quick Check

1. What is the purpose of the instanceof operator?  
*To determine whether an object belongs to a given class or not.*
2. What user action will result in a TextField object generating an action event?

*When the user presses the ENTER (or Return) key.*

### 13.4 Menus

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#### Quick Check

1. For which object do we register as an action listener: Menu, MenuItem, or MenuBar?

*MenuItem*

2. How do we get the text of a selected menu item in the actionPerformed method?

*By calling the getActionCommand method of the(ActionEvent) object.*

### 13.5 Handling Mouse Events

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#### Quick Check

1. Which listener object listens to mouse movements? Which listener object listens to mouse button presses and clicks?

*The MouseMotionListener listens to mouse movements. The MouseListener listens to mouse button events.*

2. What is the purpose of the isMetaDown method?

*It is used to detect whether the meta-modifier is pressed or not. In the Windows environment, the meta-modifier is equivalent to the pressing of the right mouse button. In the Mac environment, it is equivalent to the pressing of the Command key.*

3. What is the difference between mouseClicked and mousePressed?

*When the mouse button is pressed, mousePressed event occurs. When the mouse button is pressed and then released, mouseClicked event occurs.*

### 13.6 Other GUI Objects

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#### Quick Check

1. Name three descendant classes of the Container class?

*Window, Panel, and Frame.*

2. What is the difference between a modal and a modeless dialog?

*When a modal dialog appears on the screen, the program execution is paused until the dialog is closed. The modeless dialog will not pause the program execution.*

3. How is an applet different from a frame and a dialog?

*The Applet class is a subclass of Panel, and as such, an Applet object must be placed on a frame or a dialog for the applet to become visible.*

### 13.7 Sample Program: A Simple Calculator

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No Quick Check Questions.

