CSSE 220 – Object-Oriented Software Development
Rose-Hulman Institute of Technology

Worksheet 06

Name (Print):_____   Section:_____

1. **Instance variable**

   Instance variables belong to a (**class / individual object**).

2. **Static variable**

   The keyword **static** indicates that a field belongs to the (**class / individual object**).

3. **Accessing Static vs Instance Fields**

   Suppose the class `Player` has a static field `totalPlayers`. How do you access this static field?

   ```
   1
   2 ----------------------------------
   ```

   Now suppose each `Player` object has an instance field `health`. If you have a variable `p` referring to a `Player` object, how do you access the instance field?

   ```
   1
   2 ----------------------------------
   ```

4. **Instance vs. Static Fields**. Complete the table below:

Feature	instance (per object)	static (per class)
Memory	_____	_____
Access	_____	_____
When to use	_____	_____

5. **Static in Math Class**. Give one example of:

   - Static field: _____

   - Static method: _____

6. **Select ALL correct statements:**

   - ___ 1) You can use `this` inside a static method.

   - ___ 2) You *cannot* use `this` inside a static method.

   - ___ 3) The `main` method is always static.

   - ___ 4) The `main` method does not have to be static.

7. **One Pro and One Con of Static**

   Pro: _____

   Con: _____

8. **Final Keyword**

   The keyword `final` means _____.

9. **Overriding**

   Overriding allows a subclass to change the behavior defined in its superclass.   (T / F)

10. **Select ALL correct statements about method overriding:**

    - ___ The method name must be the same.
    - ___ The return type must be the same.
    - ___ The parameter list must be the same.
    - ___ You may change the number of parameters when overriding.

11. **Override Example**

    Suppose you have a class `Player` with fields `name` and `health`. Write an override of `toString()` that returns a single string such as `"Player=Steve, health=20"`.

    ```
    @Override
    public String toString() {

        return _____;
    }
    ```

12. **Before You Leave**

    Write one question you still have about *static, final, or overriding.*