

STUDENT ACTIVITY 2.2 KEY: INHERITANCE

MTA Course: Software Development Fundamentals

Topic: Understand inheritance

File name: SoftDevFund_SA_2.2_key

Lesson Objective:

2.2: Understand inheritance.

Resources, software, and additional files needed for this lesson:

- None

Directions to the student:

Answer the following questions.

Content:

Questions 1–3 refer to the Employee, Supervisor, and Assistant classes partially defined below.

```
public class Employee
{
    protected String output;

    public Employee()
    {
        output = "Employee working.";
    }

    public void work()
    {
        Console.WriteLine(output);
    }
}

public class Supervisor: Employee
{
    public Supervisor()
    {
        output = "Supervisor working.";
    }
}
```

```

    }
}

public class Assistant: Employee
{
    public Assistant()
    {
        output = "Assistant working.";
    }
}

```

1. Indicate which of the following declarations will cause a compile-time error:

- a. Employee employA = new Employee();// **no error**
- b. Employee employB = new Supervisor();// **no error**
- c. Supervisor employC = new Supervisor();// **no error**
- d. Supervisor employD = new Employee();// **error**
- e. Assistant employE = new Supervisor();// **error**

2. Consider the following declarations:

```

Employee employ1 = new Employee();
Supervisor employ2 = new Supervisor();
Employee employ3 = new Supervisor();

```

Identify the following assignments as legal or illegal:

- a. employ1 = employ2;// **legal**
- b. employ2 = (Supervisor) employ3;// **legal**
- c. employ1 = (Supervisor) employ2;// **legal**

3. Consider the following declarations:

```

Employee employ1 = new Employee();
Supervisor employ2 = new Supervisor();
Employee employ3 = new Supervisor();

```

Predict the output of the following code segment:

```

employ1 = employ2;
employ1.work();
employ3.work();

```

```

Supervisor working.
Supervisor working.

```