

STUDENT ACTIVITY 2.2: UNDERSTAND OBJECT ORIENTED CONCEPTS

MTA Course: 10754 Microsoft .NET Fundamentals

Topic: Understand object-oriented concepts in the .NET Framework

File name: 10754_Msft.NET_SA_2.2

Lesson Objective

2.2: Understand object-oriented concepts in the Microsoft® .NET Framework. *This objective may include but is not limited to:* understanding how inheritance works in .NET, polymorphism, and interfaces

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

- None

Directions to the student:

Answer the following questions. Ask your instructor to further explain concepts that you do not understand fully. The instructor will verify your work.

Questions 1-3 refer to the *Person*, *Student*, and *Teacher* class partially defined below.

```
public class Person
{
    public void Walk()
    {
        Console.WriteLine("This is a Person walking.");
    }
}

public class Student : Person
{
    public void Walk()
    {
        Console.WriteLine("This is a Student walking.");
    }
}

public class Teacher : Person
{
}
```

```
public void Walk()
{
    Console.WriteLine("This is a Teacher walking.");
}
}
```

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

- a. `Person instanceA = new Person();`
- b. `Person instanceB = new Teacher();`
- c. `Teacher instanceC = new Teacher();`
- d. `Teacher instanceD = new Person();`
- e. `Student instanceE = new Teacher();`

2. Consider the following declarations:

```
Person john = new Person();
Teacher tomas = new Teacher();
Person luisa = new Teacher();
```

Identify the following assignments as valid or invalid.

- a. `john = tomas;`
- b. `tomas = (Teacher) luisa;`
- c. `john = (Teacher) tomas;`

3. Consider the following declarations:

```
Person john = new Person();
Teacher tomas = new Teacher();
Person luisa = new Teacher();
```

Predict the output of the following code segment:

```
john = tomas;
john.walk();
luisa.walk();
```