

Module A:

"C# Superhero Quiz"



Question 01

```
interface I1
{
    void DoStuff( int x = 42 );
}
```

```
interface I2
{
    void DoStuff( int x = 87 );
}
```

```
class A : I1, I2
{
    public void DoStuff( int x = 112 ) => Console.WriteLine( x );
    void I2.DoStuff( int x ) => DoStuff( x );
}
```

```
I2 o = new A();
o.DoStuff();
```



Question 02

```
class Program
{
    static void Main()
    {
        string await() => var;
        Console.WriteLine(await());
    }
    ...
    ↓
```



```
...
static string var
{
    get
    {
        var var = "var";
        return var;
    }
}
```



Question 03

```
int i = 176;  
object o = i;  
double d = (double)o;  
  
Console.WriteLine(d);
```



Question 04

```
object[] array = new string[5];  
array[0] = "Hello, World!";  
array[1] = "Covariance";  
  
array[0] = 87;  
Console.WriteLine(array[0]);
```



Question 05

```
void Swap<T>( ref T a, ref T b ) where T : struct, new()
{
    T temp = a;
    a = b;
    b = temp;
}
```

```
int i = 42, j = 87;
Swap(ref i, ref j);
Console.WriteLine(i);
```



Question 06

```
unsafe static void Main( string[] args )
{
    ushort[] data = { 0, 1, 2, 3, 4 };
    void Flash( void* pointer )
    {
        byte* b = (byte*)pointer;
        for (int i = 0; i < 10; i++){ *b++ = 0; }
    }
    fixed (ushort* pointer = data) { Flash(pointer); }
    Console.WriteLine(data[4]);
}
```

Question 07

```
Func<T1, Func<T2, T>> Curry<T1, T2, T>( Func<T1, T2, T> func ) =>  
    a => b => func(a, b);
```

```
var f = Curry<int, int, int>(( x, y ) => y - x)(5);  
var i = f(7);  
Console.WriteLine(i);
```



Question 08

```
interface I
{
    void Execute();
}
```

```
class A
{
    public void Execute() => Console.WriteLine(87);
}
```

```
class B : A, I { }
```

```
I b = new B();
b.Execute();
```



Question 09

```
Zombie z = new Zombie();  
  
Console.WriteLine(z.X());  
Console.WriteLine(z.X());  
Console.WriteLine(z.X());
```

```
class Zombie  
{  
    public Func<int> X { get; }  
    public Zombie()  
    {  
        int i = 87;  
        X = () => ++i;  
    }  
}
```



Question 10

```
void Show(  
    string club = "AGF",  
    ConsoleColor color = ConsoleColor.DarkBlue ) =>  
    Console.WriteLine($"{club} playing in {color} jerseys");  
  
Show((color: ConsoleColor.White));
```

