1. What type would you choose for the following “numbers”?  
   A person’s telephone number long  
   A person’s height double  
   A person’s age int  
   A person’s gender (Male, Female, Prefer Not To Answer) String  
   A person’s salary double  
   A book’s ISBN string  
   A book’s price double  
   A book’s shipping weight double  
   A country’s population long  
   The number of stars in the universe int  
   The number of employees in each of the small or medium businesses in the United Kingdom (up to about 50,000 employees per business)

int  
**2. What are the difference between value type and reference type variables? What is boxing and unboxing?**

Reference Type variables are stored in the heap while Value Type variables are stored in the stack.

Boxing is used to store value types in the garbage-collected heap.

Unboxing is an explicit conversion from the type object to a [value type](https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/builtin-types/value-types) or from an interface type to a value type that implements the interface. An unboxing operation consists of:

Checking the object instance to make sure that it is a boxed value of the given value type.

Copying the value from the instance into the value-type variable.

**3. What is meant by the terms managed resource and unmanaged resource in .NET**

Managed resources are those that are pure . NET code and managed by the runtime and are under its direct control. Unmanaged resources are those that are not. File handles, pinned memory, COM objects, database connections.

Unmanaged resources are those that run outside the . NET runtime.  
**4. Whats the purpose of Garbage Collector in .NET?**

.NET's garbage collector manages the allocation and release of memory for your application. Each time you create a new object, the common language runtime allocates memory for the object from the managed heap.

Using just the ReadLine and WriteLine methods and your current knowledge of variables, you can have the user pass in quite a few bits of information. Using this approach, create a console application that asks the user a few questions and then generates some custom output for them. For instance, your program could generate their "hacker name" by asking them their favorite color, their astrology sign, and their street address number. The result might be something like "Your hacker name is RedGemini480.

using System;

public class Example

{ public static void Main()

{ Console.Clear(); DateTime dat = DateTime.Now;

Console.WriteLine("\nToday is {0:d} at {0:T}.", dat); Console.Write("\nPress any key to continue... "); Console.ReadLine();

}

}

1. What happens when you divide an int variable by 0?

Compile error

2. What happens when you divide a double variable by 0?

double.PositiveInfinity

3. What happens when you overflow an int variable, that is, set it to a value beyond its

range?

Compile error

4. What is the difference between x = y++; and x = ++y;?

Pre adding and post adding

1. What is the difference between break, continue, and return when used inside a loop

statement?

break: jump out of the current loop

continue: skip the current iteration, continue with the following iteration

return: terminate the loop with some return the control to the calling method

6. What are the three parts of a for statement and which of them are required?

An initializer expression, which executes once at the start of the loop;

A conditional expression, which executes on every iteration at the start of the loop to check whether the looping should

continue; -required

An iterator expression, which executes on every loop at the bottom of the statement.

7. What is the difference between the = and == operators?

= operator: assign the value to the left hand side object

== operator: check if two objects has the same value

8. Does the following statement compile? for ( ; true; ) ;

Yes

9. What does the underscore \_ represent in a switch expression?

The underscore character is used to represent the default return value.

10. What interface must an object implement to be enumerated over by using the foreach

statement?

IEnumerable