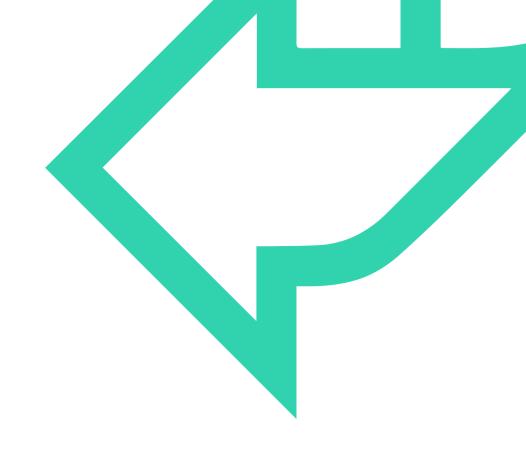
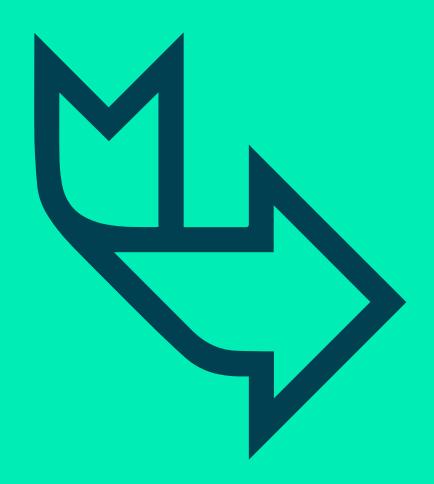


Quiz Questions





02 Introduction to C# Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



QUIZ QUESTION 1:



What are Top-Level Statements?

- A. A feature that allows developers to write C# statements without explicitly creating a namespace, class or static Main method as the entry point to a program.
- B. A feature that ensures developers place their start up logic in a static Main method located within a class and namespace.
- C. Any C# statement that invokes a function.
- D. Code that lives in any kind of UI project (Console, Web or Windows Desktop).



QUIZ QUESTION 2:



?Which ones of the following are valid ways of referring to a static function called MyFunctions that lives is a component called MyComponent that is located in a namespace called MyNamespace?

- a) Add "using MyNamespace;" to the top of the listing and then just refer to "MyComponent.MyFunction();."
- b) Add "using.MyNamespace.MyComponent.MyFunction();" to a relevant location within the code
- c) Add MyNamespace.MyComponent.MyFunction(); to a relevant location within the code
- d) Add "import MyNamespace;" to the top of the listing and then just refer to MyComponent.MyFunction\();.
- A. .a and b
- B. .a and c
- C. dandc
- D. .b





Which of the following C#.NET code snippets will correctly print "Hello C#.NET"?

```
A.
  import System;
 namespace QA
      class Program
          static void Main(string[] args)
              Console.WriteLine("Hello World");
В.
 using System;
  namespace QA
      class Program
          static void Main(string[] args)
               WriteLine("Hello World");
```



Which of the following C#.NET code snippets will correctly print "Hello World"?

```
Α.
import System;
namespace QA
  class Program
    static void Main(string[] args)
     Console.WriteLine("Hello World");
using System.Console;
namespace QA
  class Program
    static void Main(string[] args)
     WriteLine("Hello World");
```

```
В.
 using System;
 namespace QA
   class Program
     static void Main(string[] args)
       WriteLine("Hello World");
 using System;
 namespace QA
   class Program
     static void Main(string[] args)
       Console.WriteLine("Hello World");
```

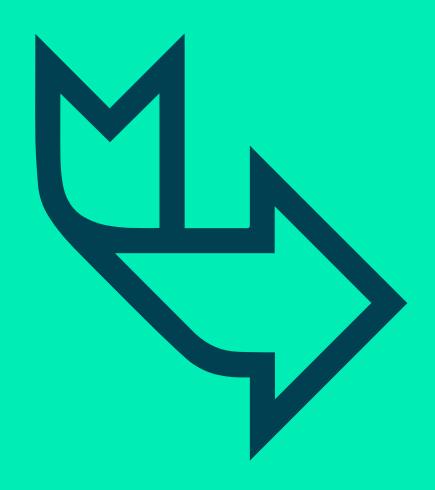


QUIZ QUESTION 4:



What do Global Using Directives do?

- A. They allow you to import a **class** for your whole application instead of just for a single file. You can add them to the top of one code file or add a <Using> item to the project file.
- B. They allow you to import a **namespace** for your whole application instead of just for a single file. You can add them to the top of one code file or add a <Using> item to the project file.
- C. They allow you to import a **namespace** for your whole application instead of just for a single file. You can **only** add them to the top of a single code file.
- D. They allow you to import a **namespace** for your whole application instead of just for a single file. You can **only** add them as a <Using> item to the project file.



03 Variable and Datatypes Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



QUIZ QUESTION 1:



How would you create add comments to your C# code?

Α.

- Block comment: /* */
- Line comment: //
- XML documentation comment: ///

В.

- Block comment: <!-- ... -->
- Line comment: //
- XML documentation comment: /* ... */

C

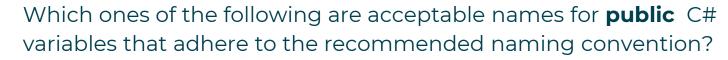
- Block comment: /// ... ///
- Line comment: /*
- XML documentation comment: //

D.

- Block comment: /* ... */
- Line comment: //
- XML documentation comment: #



QUIZ QUESTION 2:



- a) banana
- b) Counter
- c) counter
- d) switch
- e) firstName

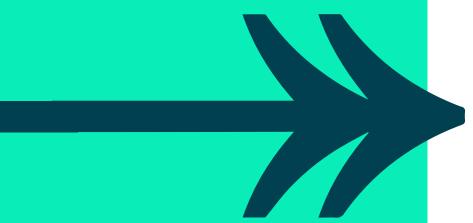
- f) lastname
- g) dateOfBirth
- h) date_of_birth

A. a, c, d, e, f, g and h

B. c, d, e and g

C. c, e and g

D. b, c, e, f, g, and h

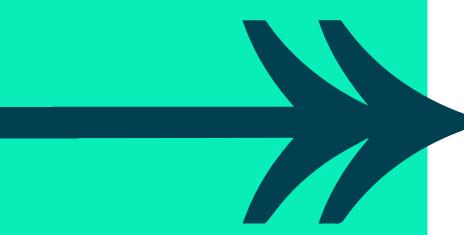




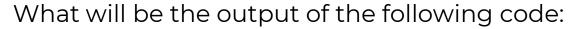
QUIZ QUESTION 3:

Which of the following data types is best used to store financial amounts?

- A. long
- B. float
- C. double
- D. decimal



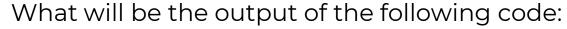




```
long x = 12;
float y = 23.582f;
z = x + y;
Console.WriteLine(z);
```

- A.34
- B.34.582
- C.Compile-time error
- D. Runtime error





```
long x = 12;
float y = 23.582f;
long z = x + y;
Console.WriteLine(z);
```

- A.34
- B. 34.582
- C. Compile-time error
- D. Runtime error



Which one of the following code snippets will correctly use string interpolation to produce the following output:

My name is Dan and my C# skills are rated 9 out of 10

```
string name = "Dan";
string name = "Dan";
                                                int rating = 9;
int rating = 9;
int maxValue = 10;
                                                int maxValue = 10;
Console.WriteLine("My name is "
                                                Console.WriteLine($"My name is " +
  + name + " and my C# skills are rated "
                                                  $"{name} and my C# skills are rated " +
  + rating + " out of " + maxValue);
                                                  $"{rating} out of {maxValue}");
 string name = "Dan";
                                                   string name = "Dan";
                                                   int rating = 9;
 int rating = 9;
                                                   int maxValue = 10:
 int maxValue = 10;
                                                   Console.WriteLine("My name is " +
 Console.WriteLine(
                                                   "{name} and my C# skills are rated " +
   string.Format("My name is " +
                                                   "{rating} out of {maxValue}");
   "\{0\} and my C# skills are rated " +
   "{1} out of {2}",
   name, rating, maxValue));
```



What will the following code print to the console? ::

```
int a = 10;
int b = 20;
int c = 4;
int d = 60;
int e = 3;
int result = a + b * c - d / e;
Console.WriteLine(result);
```

- A.20
- B.70
- C. -310
- D. -560



What, if anything, is wrong with the following line of code: sbyte sizeOf = 300;

- A. Nothing is wrong although it's not a very good name.
- B. byte is 8-bit signed integer with a range between 0 to +255
- C. sizeOf is a reserved word
- D. There is no such type as byte

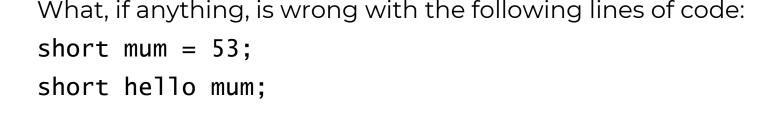




What, if anything, is wrong with the following line of code: short mum = 43;

- A. Nothing is wrong.
- B. Nothing is technically wrong though "mum" isn't a very good name for a data type of short
- C. There is no such data type as short
- D. The line should read as:
 short mum = "43";





- A. Nothing is wrong with the code.
- B. The code would compile but the variable names are poor
- C. Although the variable names are poor, the code would technically compile if an assignment operator or comma token was placed between hello and mum
- D. There is no need for the first line because the second line could become: short hello 53;







What, if anything, is wrong with the following lines of code:

```
int big = 100000000;
long bigger = big + big + big; / ouch /
```

- A. Nothing is wrong with the code.
- B. You can only add one thing at a time. The code should read:

```
int big = 100000000;
long bigger = bigger + big;
bigger = bigger + big;
```

- C. The comment is badly formed. Use /* */ or //
- D. Adding 3 integers of that size will cause an overflow



What, if anything, is wrong with the following line of code: double age = 78.0;

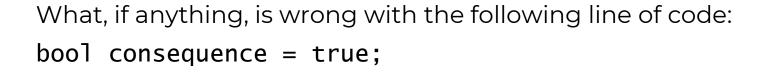
- A. Nothing is wrong with the code.
- B. The code should be altered to: int age = 78.0;
- C. The code should be altered to: double age = 78;
- D. The code will not compile because "age" is a reserved word.



What, if anything, is wrong with the following line of code: $double\ new = 0.1$;

- A. Nothing is wrong with the code.
- B. The code should be altered to:
 string new = "0.1";
- C. The code should be altered to:
 double new;
 0.1 = new;
- D. The code will not compile, new is a reserved word and is illegal to use as a variable name.





- A. Nothing is wrong with the code.
- B. The code should be re-written as: boolean consequence = True;
- C. The code should be re-written as:
 bool consequence = -1;
- D. The code should be re-written as:
 boolean consequence;
 true = consequence;



What, if anything, is wrong with the following line of code:

```
bool a; b; c;
```

- A. Nothing is wrong with the line of code.
- B. The code should be altered to read like the following:

```
boolean a;
```

boolean b;

boolean c;

- C. The first 2 semicolons should be replaced by commas
- D. The first 2 semicolons should be replaced by colons





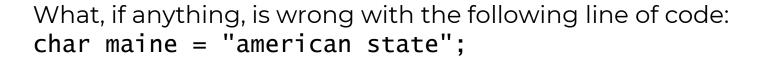


What, if anything, is wrong with the following lines of code:

```
int big = 100;
int bigger = 99;
bool max = big > bigger;
```

- A. Nothing is wrong with the lines of code.
- B. The code should be rewritten as the following:
 int big = 100;
 int bigger = 99;
 boolean max == big > bigger;
- C. big and bigger should be declared as boolean data types
- D. max should be declared as an integer





- A. Nothing is wrong with the line of code.
- B. The code should be rewritten as the following because America is a proper noun:

 char maine = "American state";
- C. The code should be rewritten as the following:
 string maine = 'american state';
- D. maine has been declared as a 'char' so it can only be set to a single character inside single quotes.



04 Conditionals Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



Will the "Will we see this?" message be written to the console if the following code is run?

```
int var1 = 4, var2 = 2, var3 = 0;
if ((var1 > var2) && (var3 == 0))
{
    Console.WriteLine( "Will we see this?" );
}
```

- A. Yes
- B. The code will run but the message will NOT be written to the console
- C. The code will start to run but crash with a run time error
- D. The code has a syntax error and will fail to run



Will the "Will we see this?" message be written to the console if the following code is run?

```
int var1 = 4, var2 = 6, var3 = 0;
if ((var1 > var2) || (var3 == 0))
{
    Console.WriteLine( "Will we see this?" );
}
```

- A. Yes
- B. The code will run but the message will NOT be written to the console
- C. The code will start to run but crash with a run time error
- D. The code has a syntax error and will fail to run



Will the "Will we see this?" message be written to the console if the following code is run?

```
int var1 = 1, var2 = 2, var3 = 3;
if ((var1 == 1) || (var2 == 2) && (var3 == 1))
{
    Console.WriteLine( "Will we see this?" );
}
```

- A. Yes
- B. The code will run but the message will NOT be written to the console
- C. The code will start to run but crash with a run time error
- D. The code has a syntax error and will fail to run

QUIZ QUESTION 4

Determine the missing parts to complete the following switch statement..

```
int day = (int)DateTime.Now.DayOfWeek;
  switch (?!)
     case 1: case 2: case 3: case 4: case 5:
       Console.WriteLine("Week day :-(");
       break;
     case 6: case 7:
       Console.WriteLine("Weekend! :-)");
       break:
     ?2:
       Console.WriteLine("Invalid day number ;_;");
       ?3;
  }
A. ?1 = case day, ?2 = case, ?3 = empty
B. ?1 = day, ?2 = else, ?3 = exit
C. ?1 = day, ?2 = default, ?3 = break
D. ?1 = day, ?2 = case else, ?3 = break
```



What will the following code print?

Car operation is: PrepareToGo

```
public enum TrafficLightColour
                                                public enum Operation
  Red,
                                                  Stop,
  RedAndAmber,
                                                  PrepareToGo,
                                                  GoIfTheWayIsClear,
 Green,
                                                  StopProvidedItIsSafeToDoSo
 Amber
public static Operation GetOperation(TrafficLightColour colour) => colour switch
 TrafficLightColour.Red => Operation.Stop,
 TrafficLightColour.RedAndAmber => Operation.PrepareToGo,
 TrafficLightColour.Green => Operation.GoIfTheWayIsClear,
 TrafficLightColour.Amber => Operation.StopProvidedItIsSafeToDoSo,
 _ => throw new ArgumentOutOfRangeException(nameof(colour), $"Not expected colour value: {colour}"),
};
static void Main(string[] args)
 TrafficLightColour colour = TrafficLightColour.RedAndAmber;
 Console.WriteLine($"Traffic light colour is: {colour.ToString()}");
 Console.WriteLine($"Car operation is: {GetOperation(colour).ToString()}");
Α.

    Code will not compile

    Error: Not expected colour value: ...

                                               D.
В.

    Traffic light colour is: Red And Amber

    Traffic light colour is: RedAndAmber
```

Car operation is: Prepare To Go

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QUIZ QUESTION 5



- A. It returns the value of its left-hand operand if it isn't null, otherwise it evaluates the right-hand operand. If the left-hand operand is non-null, the right-hand operand is not evaluated. Operator: ??
- B. It assigns the value of its right-hand operand to its left-hand operand only if the left-hand operand evaluates to null. If the left-hand operand is non-null, the right-hand operand is not evaluated. Operator: ?.
- C. It applies a member access operation to its operand only if that operand evaluates to non-null, otherwise, it returns null. Operator: ??=
- D. It assigns the value of its right-hand operand to its left-hand operand only if the left-hand operand evaluates to null. If the left-hand operand is non-null, the right-hand operand is not evaluated. Operator: ??



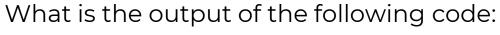
05 Loops and Collections Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions

QUIZ QUESTION 1



```
public class ArrayTest {
  public static void Main (string args[]) {
    int [] num = new int[] { 20, 20, 40};
    for (int i=3; i >= 0; i--) {
        Console.WriteLine ("The value of array is " + num[i]);
    }
}
```

- A. The value of array is 20 The value of array is 20 The value of array is 40
- B. The value of array is 40 The value of array is 20 The value of array is 20
- C. There is a syntax error and the program won't compile
- D. The code has a logic error and will crash when it is run

QUIZ QUESTION 2

What is the output of the following code:

```
public class ArrayTest {
  public static void Main (string[] args) {
    int [] num = new int[] { 20, 20, 40};
    for (int i=3; i >= 0; i--) {
        Console.WriteLine ("The value of array is " + num[i]);
    }
}
```

- A. The value of array is 20 The value of array is 20 The value of array is 40
- B. The value of array is 40 The value of array is 20 The value of array is 20
- C. There is a syntax error and the program won't compile
- D. The code has a logic error and will crash when it is run

QUIZ QUESTION 3

What is the output of the following code:

```
public class ArrayTest {
  public static void Main (string[] args) {
    int [] num = new int[] { 20, 20, 40};
    for (int i=2; i >= 0; i--) {
        Console.WriteLine ("The value of array is " + num[i]);
    }
}
```

- A. The value of array is 20 The value of array is 20 The value of array is 40
- B. The value of array is 40 The value of array is 20 The value of array is 20
- C. There is a syntax error and the program won't compile
- D. The code has a logic error and will crash when it is run

QA

QUIZ QUESTION 4

```
int i = 0;
for(; ; )
{
   if (i < 10)
       Console.Write(i);
   else
       continue;
   i++;
}</pre>
```

- A. 0123456789
- B. 12345678910
- C. Infinite Loop
- D. Compile error



What is the output of the following code:

```
int i = 0;
for(; ; )
{
   if (i < 10)
        Console.Write(i);
   else
        break;
   i++;</pre>
```

- A. 0123456789
- B. 12345678910
- C. Infinite Loop
- D. Compile error

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```
static void Main(string[] args)
{
   PrintGreeting();
}
static bool PrintGreeting()
{
   Console.Write("Hello");
   return false;
}
```

- A. Compile-time error
- B. Runtime error
- C. Hello
- D. No output



```
int i = 1, n = 5, product;
do
{
   product = n * i;
   Console.WriteLine("{0} * {1} = {2}", n, i, product);
   i++;
} while (i <= 5 && n < 5);</pre>
```

- B. 5*1=5
- C. The code will run but will not output anything to the console
- D. The code will not compile because of a syntax error



What is the output of the following code:

```
int i = 1, n = 5, product;
do
{
  product = n * i;
  Console.WriteLine("{0} * {1} = {2}", n, i, product);
  i++;
} while (i <= 5 && n <= 5)</pre>
```

B. 5*1=5

- C. The code will run but will not output anything to the console
- D. The code will not compile because of a syntax error



```
int i = 1, n = 5, product;
while (i <= 5 && n < 5)
{
   product = n * i;
   Console.WriteLine("{0} * {1} = {2}", n, i, product);
   i++;
}</pre>
```

- B. 5 * 1 = 5
- C. The code will run but will not output anything to the console
- D. The code will not compile because of a syntax error



```
List<int> marks = new List<int> { 10, 20, 35, 50 };
 foreach (int num in marks)
   num = num * 2;
 foreach (int num in marks)
   Console.WriteLine(num);
A. 20
   40
  70
  100
B. 10
  20
  35
   50
```

- C. The code will run but will not output anything to the console
- D. The code will not compile because of a syntax error



```
List<int> integers = new () { 1, 1, 2, 3, 5, 8, 13, 21 };
foreach (int i in integers)
{
   Console.Write(i * 2 + " ");
}
```

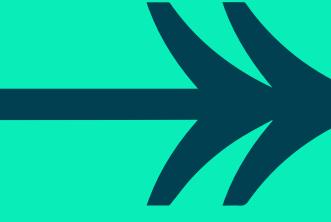
- A. 224610162642
- B. The code will run but will not print anything
- C. The code will run but will trigger a run time error
- D. The code will not compile because of a syntax error





```
Dictionary<int, string> numberNames = new Dictionary<int, string>();
 numberNames.Add(1, "One"); //adding a key/value using the Add() method
 numberNames.Add(2, "Two");
 numberNames.Add(3, "Three");
 numberNames.Add(3, "Three");
 foreach (KeyValuePair<int, string> kvp in numberNames)
   Console.WriteLine("Key: {0}, Value: {1}", kvp.Key, kvp.Value);
A. Key: 1, Value: One
   Key: 2, Value: Two
   Key: 3, Value: Three
B. Key: 1, Value: One
   Key: 2, Value: Two
   Key: 3, Value: Three
   Key: 3, Value: Three
```

- C. The code will run but will trigger a run time error
- D. The code will not compile because of a syntax error





07 Methods Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



Which one of the possible answers will produce a syntax error when attempting to call the following method?:

```
public class Parrot
   public void Talk(string text, int numTimes, Boolean includeSquark)
        {...}
A. Parrot polly = new Parrot();
    polly.Talk("Who's a pretty boy", 2, true);
B. Parrot polly = new Parrot();
    polly.Talk(text: "Who's a pretty girl", 2, includeSquark: true);
C. Parrot polly = new Parrot();
    polly.Talk(numTimes: 2, text: "Polly wants a cracker", true);
D. Parrot polly = new Parrot();
    polly.Talk(numTimes: 2, includeSquark: true, text:"Hello");
```



Q2: Which one of the following snippets of code will **NOT** produce a syntax or runtime erro<u>r</u>?: A public class Parrot { public void Talk(string text = "Hello", int numTimes = 1, Boolean includeSquark) {...}} Parrot polly = new Parrot(); polly.Talk("Who's a pretty boy", includeSquark: true); R public class Parrot { public void Talk(string text = "Hello", int numTimes = 1, Boolean includeSquark) {...}} Parrot polly = new Parrot(); polly.Talk(numTimes: 2, text: "Polly wants a cracker", true); C.public class Parrot { public void Talk(string text = "Hello", int numTimes = 1, Boolean includeSquark) {...}} Parrot polly = new Parrot(); polly.Talk("Who's a pretty boy", includeSquark: true); D. public class Parrot { public void Talk(string text="Hello", int numTimes=1, Boolean includeSquark=false) {...}} Parrot polly = new Parrot(); polly.Talk(numTimes=3, talk="Pretty Polly");



Q3: Which one of the following snippets of code will **NOT** produce a syntax or runtime error?:

```
A. int i = 10;
   MyOverloadedMethod(i);
   static void MyOverloadedMethod(int i){
     Console.WriteLine($"i is an integer and has a value of {d}");}
   static void MyOverloadedMethod(Int32 myInt){
     Console.WriteLine($"myInt is an integer and has a value of {myInt}");}
B_i int i = 10;
   MyOverloadedMethod(i);
   static void MyOverloadedMethod(double d){
     Console.WriteLine($"d is an double and has a value of {d}");}
   static void MyOverloadedMethod(object o){
     Console.WriteLine($"o is a {o.GetType()} and has a value of {o}");}
C. int i = 10;
   MyOverloadedMethod(i);
   static void MyOverloadedMethod(int i){
     Console.WriteLine($"i is an integer and has a value of {d}");}
   static string MyOverloadedMethod(int i){
     return $"i is an integer and has a value of {d}";}
D. long i = 10;
   MyOverloadedMethod(i);
   static void MyOverloadedMethod(int i, int j = 0) {
     Console.WriteLine("i and j are integers. i = {i}, j = {j}"); }
   static void MyOverloadedMethod(int d) {
     Console.WriteLine($"d is an integer and has a value of {i}");}
```

QA

QUIZ QUESTION 4

Which one of the possible answers produces output that is exactly the same as the code given below?:

```
public static class Clock {
  public static string AMPM(int hr) {
    hour = Mod(hr);
    if (hr < 12)
       return "AM";
    else
       return "PM";
  }
  static int Mod(int hr) {
    hr = hr % 24;
    return hr < 0 ? hr + 24 : hr;
  }
}</pre>
```

A. public static string AMPM(int hr) ->

```
(hr % 24 < 0 ? (hr % 24 + 24) : hr % 24) < 12 ? "AM" : "PM";
B. public static string AMPM(int hr) =>
        (hr % 24 < 0 ? (hr % 24 + 24) : hr % 24) < 12 ? "AM" : "PM";
C. public static string AMPM(int hr) => Mod(hr) < 12 iif "AM" else "PM";
    static int Mod(int hr) => hr % 24 < 0 iif hr % 24 + 24 else hr % 24;</pre>
```

```
D. public static string AMPM(int hr) => {
    (hr % 24 < 0 ? (hr % 24 + 24) : hr % 24) < 12 ? "AM" : "PM"; }</pre>
```



What will be printed when the following piece of code is run?:

```
public static class Clock {
  private static void MyFunc(ref int parm1, int parm2, out int parm3){
    parm1++;
    parm2++;
    parm3 = 13;}

static void Main(string[] args){
    int a = 10;
    int b = 11;
    int c = 100;
    MyFunc(ref a, b, out c);
    Console.WriteLine($"a: {a}, b: {b}, c: {c}");}}
```

- A. a: 11, b: 11, c: 13
- B. The code will not run because of syntax errors
- C. a: 10, b: 12, c: 13
- D. a: 11, b: 12, c: 100



```
static void Main(string[] args) {
      Car c = new Car("Ford", "Fiesta");
      ChangeCarByValue(c);
      Console.WriteLine($"After changing by value: {c}");
      ChangeCarByReference(ref c);
      Console.WriteLine($"After changing by ref: {c}");
    static void ChangeCarByValue(Car c){
       c.Make = "AUDI";
       c.Model = "TT"; }
    static void ChangeCarByReference(ref Car c){
      c.Make = "BMW";
      c.Model = "Z4"; }
R After changing by value: Car: FORD FIESTA
  After changing by ref: Car: BMW Z4
B. After changing by value: Car: FORD FIESTA
  After changing by ref: Car: FORD FIESTA
C. After changing by value: Car: AUDI TT
  After changing by ref: Car: BMW Z4
D. After changing by value: Car: AUDI TT
```

After changing by ref: Car: FORD FIESTA



08 Properties and Constructors Quiz Questions

→ Enter:

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- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



A class called GolfClub ('group of members' not a 'stick') needs to keep track of the following:

A club's Location (date type string) - assume clubs will never be relocated to a new location

The NumberOfMembers (data type int) a club has - settable each year but is not validated

The TotalExpectedCosts (data type decimal) for a year of a club - settable each year but increase can't go up more than 5%pa

The annual Subscription (data type int, to nearest lower £) members will need to pay - calculated as the total costs / the number of members

Assuming the golf club will never move how should its location be managed within the class?

- A. private string location;
 public string Location {
 get{return location;}
 set{location = value;}
 }
- B. private string location;
- C. public string location;
- D. public string Location {get; private set;}



Q2:

A class called GolfClub ('group of members' not a 'stick') needs to keep track of the following:

A club's Location (date type string) - assume clubs will never be relocated to a new location

The NumberOfMembers (data type int) a club has - settable throughout year but is not validated

The TotalExpectedCosts (data type decimal) for a year of a club - settable each year but increase can't go up more than 5%pa

The annual Subscription (data type int, to nearest lower £) members will need to pay - calculated as the total costs / the number of members

Assuming the number of members is set as and when but needs no validation, how should it be managed within the class?

```
A. private NumberOfMembers{get; set;}
B. private string numberOfMembers;
   public string NumberOfMembers
     get{return numberOfMembers}
     set{numberOfMembers = value;}
C. public NumberOfMembers{ get; set;}
D. public NumberOfMembers
     get;
     private set;
```



Q3:

A class called GolfClub ('group of members' not a 'stick') needs to keep track of the following:

A club's Location (date type string) - assume clubs will never be relocated to a new location

The NumberOfMembers (data type int) a club has - settable each year but is not validated

The TotalExpectedCosts (data type decimal) for a year of a club - settable each year but increase can't go up more than 5%pa

The annual Subscription (data type int, to nearest lower £) members will need to pay - calculated as the total costs / the number of members

The total value of all the expected costs for the year needs to be settable but is not allowed to increase by more than 5% per annum.

How would the class best manage this value?

```
A. public decimal TotalExpectedCosts {get; set;}
B. private decimal totalExpectedCosts public decimal;
   TotalExpectedCosts
     get{return totalExpectedCosts;}
     set
       if (value <= totalExpectedCosts * 1.05M)</pre>
         {totalExpectedCosts = value;}
C. private decimal totalExpectedCosts;
   public decimal TotalExpectedCosts
       get{return totalExpectedCosts;}
D. public decimal TotalExpectedCosts;
```



Q4:

A class called GolfClub ('group of members' not a 'stick') needs to keep track of the following:

A club's Location (date type string) - assume clubs will never be relocated to a new location

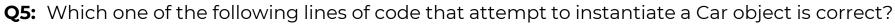
The NumberOfMembers (data type int) a club has - settable each year but is not validated

The TotalExpectedCosts (data type decimal) for a year of a club - settable each year but increase can't go up more than 5%pa

The annual Subscription (data type int, to nearest lower £) members will need to pay - calculated as the total costs / the number of members

The subscription for golf club membership is calculated by the total costs divided by the number of members and can be rounded down to the nearest pound). How would this be best managed in the class?

```
A. private string subscription;
   public int Subscription {
     get { return subscription; }
B. private string subscription;
   public int Subscription {
     get
       { return (int)(TotalExpectedCosts / NumberOfMembers); }
     set
       { subscription = value; }
C. public int Subscription {
     set
       { return (int)(TotalExpectedCosts / NumberOfMembers); }
D. public int Subscription {
     get {return (int)(TotalExpectedCosts / NumberOfMembers); }
```



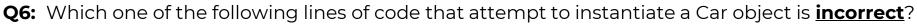


public class Car {

```
public string model { get; set; }
  public Car(string make, string model)
    make = make:
    model = model;
//Client code:
Car car = new Car("Ford", "Fiesta"):
public class Car {
  public string Make { get; set; }
  public string Model { get; set; }
  public void Car(string make, string model)
    Make = make;
    Model = model;
//Client code:
Car car = new Car("Ford", "Fiesta");
```

public string make { get; set; }

```
C. public class Car {
      public string Make { get; set; }
      public string Model { get; set; }
      public Car(string make, string model)
        Make = make:
        Model = model;
    //Client code:
    Car car = new Car("Ford", "Fiesta");
D. public class Car {
      public string Make { get; set; }
      public string Model { get; set; }
     public Car(string make, string model)
        Make = make:
        Model = model:
    //Client code:
    Car car = new Car();
```

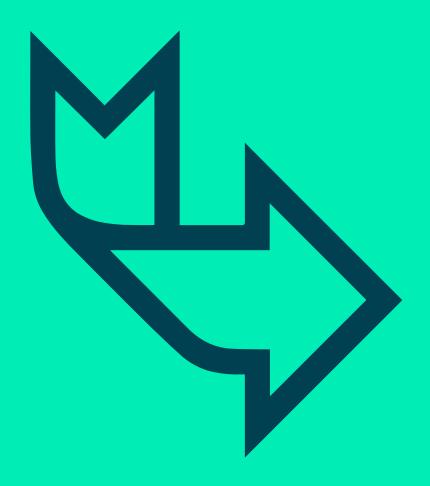




```
A. public class Car {
    public string make { get; set; }
    public string model { get; set; }
    public Car()
    {
    }
}
//Client code:
Car car = new Car("Ford", "Fiesta");
```

```
B. public class Car {
    public string Make { get; set; }
    public string Model { get; set; }
}
//Client code:
Car car = new Car();
car.Make = "Ford";
car.Model = model;
```

```
C. public class Car {
      public string Make { get; set; }
      public string Model { get; set; }
      public Car()
    //Client code:
    Car car = new Car(){Make:"Ford", Model:"Fiesta"};
D. public class Car {
      public string Make { get; set; }
      public string Model { get; set; }
      public Car()
    //Client code:
    Car car = new Car{Make:"Ford", Model:"Fiesta"};
```



08 Inheritance and Abstract Classes Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



Q1:

```
Consider the following code:
public class Person {
    public string Name { get; set; }
public class Student : Person {
    public string Course { get; private set; }
    public string TermAddress { get; set; }
public class Teacher : Person {
    public string[] Specialisms { get; private set; }
public class Administrator : Person {
    public string Department { get; private set; }
class Program {
    static void Main(string[] args){
        Student s = new Student();
        s.Name = ""Jane Smith"";
        s.TermAddress = ""5 Park Way, Stirchley"";
        s.Department = ""Computer Science"";
```

```
A. Student s = new Student();
B. s.Name = "Jane Smith";
C. s.TermAddress = "5 Park Way, Stirchley";
D. s.Department = "Computer Science";
```

Which one of the lines of client code will cause a build error?



Q2:

```
public class Animal
public int LimbCount { get; set; } = 3;
public string Display()
   return $"I am an animal with {LimbCount} limbs";
public class Dog: Animal
public string Name { get; set; } = "Fido";
public string Display()
   return
     $"I am a dog called {Name} and I have {LimbCount} limbs";
public static class Program
static void Main(string[] args)
  Dog dog = new Dog { LimbCount = 4, Name = "Rover" };
  Console.WriteLine(dog.Display());
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am an animal with 4 limbs
 I am a dog called Rover and I have 4 limbs
- D. I am a dog called Fido and I have 3 limbs



Q3:

```
What will be the output of the following code:
```

```
public class Animal
public int LimbCount { get; set; } = 3;
public string Display()
  return $"I am an animal with {LimbCount} limbs";
public class Dog: Animal
public string Name { get; set; } = "Fido";
public string Display()
   return
     $"I am a dog called {Name} and I have {LimbCount} limbs";
public static class Program
static void Main(string[] args)
  Animal dog = new Dog { LimbCount = 4, Name = "Rover" };
  Console.WriteLine(dog.Display());
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am an animal with 3 limbs
- D. I am a dog called Fido and I have 3 limbs



Q4:

```
What will be the output of the following code:
```

```
public class Animal
public int LimbCount { get; set; } = 3;
public virtual string Display()
  return $"I am an animal with {LimbCount} limbs";
public class Dog: Animal
public string Name { get; set; } = "Fido";
public string Display()
   return
     $"I am a dog called {Name} and I have {LimbCount} limbs";
public static class Program
static void Main(string[] args)
  Animal dog = new Dog { LimbCount = 4, Name = "Rover" };
  Console.WriteLine(dog.Display());
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am an animal with 3 limbs
- D. Error



Q5:

```
What will be the output of the following code:
```

```
public class Animal
public int LimbCount { get; set; } = 3;
public virtual string Display()
  return $"I am an animal with {LimbCount} limbs";
public class Dog: Animal
public string Name { get; set; } = "Fido";
public override string Display()
   return
     $"I am a dog called {Name} and I have {LimbCount} limbs";
public static class Program
static void Main(string[] args)
  Animal dog = new Dog { LimbCount = 4, Name = "Rover" };
  Console.WriteLine(dog.Display());
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am an animal with 3 limbs
- D. Error



Q6:

```
What will be the output of the following code:
 public class Animal
  public int LimbCount { get; set; } = 3;
  public string Display()
    return $"I am an animal with {LimbCount} limbs");
 public class Dog: Animal
  public string Name { get; set; } = "Fido";
  public virtual string Display()
    return
      $"I am a dog called {Name} and I have {LimbCount} limbs";
 public static class Program
  static void Main(string[] args)
    Animal dog = new Dog { LimbCount = 4, Name = "Rover" };
    Console.WriteLine(dog.Display());
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am an animal with 3 limbs
- D. Error



Q6:

```
what will be the output of the following code:
 public class Animal {
  public int LimbCount { get; set; } = 3;
  public string Display() {
    return $"I am an animal with {LimbCount} limbs"; }
 public class Dog: Animal {
  public string Name { get; set; } = "Fido";
  public virtual string Display() {
    return $"I am a dog called {Name} and I have {LimbCount} limbs"; }
 public class Staffie : Dog {
  public int TailWagSpeed { get; set; } = 92;
  public override string Display() {
    return base.Display()
      + $" and a tail wag speed of {TailWagSpeed} wpm"; }
 public static class Program {
  static void Main(string[] args) {
    Dog dog = new Staffie {
       LimbCount = 4, Name = "Rover", TailWagSpeed = 88 };
   Console.WriteLine(dog.Display());}
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am a dog called Rover and I have 4 limbs and a tail wag speed of 88 wpm
- D. Error



Q8:

```
what will be the output of the following code:
 public class Animal {
  public int LimbCount { get; set; } = 3;
  public string Display() {
    return $"I am an animal with {LimbCount} limbs"; }
 public class Dog: Animal {
  public string Name { get; set; } = "Fido";
  public virtual string Display() {
    return $"I am a dog called {Name} and I have {LimbCount} limbs"; }
 public class Staffie : Dog {
  public int TailWagSpeed { get; set; } = 92;
  public override string Display() {
    return base.Display()
      + $" and a tail wag speed of {TailWagSpeed} wpm"; }
 public static class Program {
  static void Main(string[] args) {
    Animal dog = new Staffie {
       LimbCount = 4, Name = "Rover", TailWagSpeed = 88 };
   Console.WriteLine(dog.Display()); }
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am a dog called Rover and I have 4 limbs and a tail wag speed of 88 wpm
- D. Error



Q10:

```
what will be the output of the following code:
 public abstract class Animal {
  public int LimbCount { get; set; } = 3;
  public abstract string Display(); }
 public class Dog: Animal {
  public string Name { get; set; } = "Fido";
  public string Display() {
    return $"I am a dog called {Name} and I have {LimbCount} limbs"; }
                                 Animal
 public class Staffie : Dog {
  public int TailWagSpeed { get; set; } = 92;
  public string Display() {
    return base.Display()
      + $" and a tail wag speed of {TailWagSpeed} wpm"; }
 public static class Program {
  static void Main(string[] args) {
    Animal dog = new Staffie {
       LimbCount = 4, Name = "Rover", TailwagSpeed = 88 };
    dog.Display(); }
```

- A. I am an animal with 4 limbs
- B. I am a dog called Rover and I have 4 limbs
- C. I am a dog called Rover and I have 4 limbs and a tail wag speed of 88 wpm
- D. Error



09 Interfaces Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



Q1:

When run what will be the output of the following code?

```
interface ILetterMaze {
 void A();
 void B();
 void C();
 void D();}
public abstract class LM : ILetterMaze {
 public abstract void A();
  public void B() { Console.WriteLine("I am base B"); }
  public void C() { Console.WriteLine("I am base C"); }
  public virtual void D() { Console.WriteLine("I am base D"); } }
class DLM : LM {
  public override void A() { Console.WriteLine("I am derived A"); }
  public new void B() { Console.WriteLine("I am derived B"); }
  public override void D() { Console.WriteLine("I am derived D"); } }
class Program {
  public static void Main(string[] args) {
    ILetterMaze a = new DLM();
   a.A():
   a.B();
   a.c();
    a.D(); }
```

- A. I am derived A
 I am base B
 I am base C
 I am derived D
- B. I am derived A
 I am derived B
 I am base C
 I am derived D
- C. I am base A
 I am base B
 I am base C
 I am base D
- D. Error



10 Delegates and Lamdas Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



```
Given the following code:
 class Utils {
    public int CountWords(string s) {
      MatchCollection collection = Regex.Matches(s, @"[\S]+");
      return collection.Count; }
Which one of the following is a valid way of calling the CountWords function?
A. public delegate int del(string s);
   static void Main(string[] args) {
     Utils utils = new Utils();
     del d = new del(utils.CountWords);
     int numwords = d("The world has gone completely mad!");
B. string sentence = "The world has gone completely mad!";
   int numWords = CountWords(sentence);
C. string sentence = "The world has gone completely mad!";
   int numWords = Utils.CountWords(sentence);
D. public Delegate del = new Delegate( int i, string s );
   static void Main(string[] args) {
     Utils utils = new Utils();
     del d = new del(utils.Countwords);
     int numwords = d("The world has gone completely mad!");
```



Given the following piece of code:

```
int x = 3;
if (isPositive(x)) { Console.WriteLine($"{x} is positive!"); };
```

Which one of the following expressions would be an appropriate declaration for the isPositive function?

- A. Func
 <bool> isPositive = int x => x >= 0;
- B. Func
 x = 0;
- C. Func
 <bool, int> isPositive = x => x >= 0;
- D. Func<int, bool> isPositive = $x \Rightarrow x >= 0$;





Q3: Given the following code and the fact that the Car type supports both Make and Model properties. How would you utilise the FindCars method to return all the "Fiestas" in the cars collection?

```
static List<Car> FindCars(List<Car> cars, Func<Car, bool> func)
{
  List<Car> filteredCars = new List<Car>();
  foreach (Car car in cars)
  {
   if (func(car)) { filteredCars.Add(car); }
  }
  return filteredCars;
}
```

```
A. List<Car> fiestas = FindCars(cars, foreach(c => cars.Model == "Fiesta");
B. List<Car> fiestas = FindCars(cars, c => return (c.Model == "Fiesta"));
C. List<Car> fiestas = FindCars(cars, "Fiesta");
D. List<Car> fiestas = FindCars(cars, c => c.Model == "Fiesta");
```



11 LINQ Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

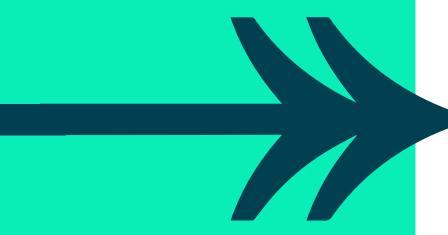
- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



What is the output of the following code?

```
string[] colors = { "green", "brown", "blue", "red" };
Console.WriteLine(colors.Max(c => c.Length));?
```

- A. 5
- B. 4
- C. green
- D. brown





Given the following code, what is the data type of the query variable?

```
string[] fruit = { "grapes", "apples", "pears", "cherries" };
var query =
  from f in fruit
  where f.Length > 5
  select f;
```

- A. IQueryable<string>
- B. string
- C. IEnumerable<string>
- D. IEnumerable<int>





What does the following example output?

```
string[] fruit = { "grapes", "cherries", "apples", "pears", "apricots"
};

var list = new List<string> (fruit);

IEnumerable<string> query = list.Where (c => c.Length == 6);

list.Remove ("grapes");

Console.WriteLine (query.Count());
```

- A. 0
- B. 1
- C. 2
- D. Exception





What does the following example output?

```
string[] fruit = { "grapes", "cherries", "apples", "pears", "apricots"
};

var list = new List<string> (fruit);

IEnumerable<string> query = list.Where (c => c.Length == 6).ToList();

list.Remove ("grapes");

Console.WriteLine (query.Count());
```

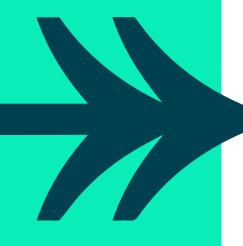
- A. 0
- B. 1
- C. 2
- D. Exception



Given a Car class has Make, Model and Registration properties and the following code, how would you filter the collection to return all cars that are Fords in reverse alphabetical sequence of their registrations?

```
List<Car> cars = new(){
   new Car("Ford", "Mondeo", "AB12 ABC"),
   new Car("AUDI", "TT", "AU01 TT0"),
   new Car("Ford", "Fiesta", "FF10 ILF"),
   new Car("Ford", "Fiesta", "JB00 OOT") };
```

- A. IEnumerable Car fords = from car in cars where car.Make == "Ford" orderbydescending car.Registration select car;
- B. IEnumerable<Car> fords = cars .Where(c => c.Make == "Ford") .OrderByDescending(c => c.Registration);
- C. IEnumerable < Car > fords = from cars where car. Make == "Ford" orderby car. Registration descending select car;
- D. IEnumerable<Car> fords = cars .Where(c => c.Make == "Ford") .OrderByDescending(c => c.Registration) .Select(c => new { c.Make, c.Model, c.Registration })





12 Exception Handling Quiz Questions

→ Enter:

http://tick.qaalabs.com/CSharpQuiz

- → Enter your name in the appropriate box
- → Click the A, B, C or D buttons to enter your answers to the following questions



```
Q1: What will the following code output when run?
 class program
    public static void Main(string[] args)
         try
             throw new NullReferenceException("C");
             Console.WriteLine("A");
         catch (ArithmeticException e)
             Console.WriteLine("B");
         Console.ReadLine();
В. в
C. Compile time error
```



Q2: What will the following code output when run?

```
class Program {
  public static void Main(string[] args) {
  try {
     int p = 2;
     int q = 11 / p;
     try {
       if (p == 2)
         p = p / p - p;
       if (p != 0) {
         int[] r = { 1 };
        r[7] = q;
         r[8] = p;
     finally {
       Console.WriteLine("X");
   catch (IndexOutOfRangeException exn) {
     Console.WriteLine("Y");
   Console.ReadLine();
```

- A. X
 Followed by a run time exception
- B. Y
- C. X
- D. X



Q3: You're the in-house TDD unit test expert. You've been asked to review the following xUnit unit test which currently passes successfully when run:

```
using System;
using Xunit;
namespace QA.Utils.Tests
{
    public class MathToolsTest
    {
        [Fact] void Divide_ByZero_ThrowsArgumentException()
        {
            Assert.Throws<ArgumentException>(() => MathTools.Divide(3, 0));
        }
    }
}
```

Which of the following statements correctly describes the intention of this unit test?

- A. The unit test is making sure that the "Divide" method throws an ArgumentException when an attempt is made to divide by 0
- B. The unit test is making sure that the "Divide" method does not throw an ArgumentException when an attempt is made to divide by 0
- C. The unit test is making sure that the "Divide" method returns 0 when an attempt is made to divide by 0
- D. The unit test is making sure that the "Divide" method returns 42 when an attempt is made to divide by 0



Q4: You've been tasked with reviewing the following code and unit tests developed by some else for the company's financial system.

```
//Application (class under test):
```

```
using System;
namespace QA.Utils {
  public class MathTools {
    public static double convertToDecimal(int numerator, int denominator) {
      if (denominator > 0) {
        throw new ArgumentException("Denominator must not be 0");
      return (double)numerator / (double)denominator;
//Unit Tests:
using System;
using Xunit;
namespace QA.Utils.Tests {
  public class MathToolsTest
    [Fact] //TEST1
    void TestConvertToDecimalSuccess() {
      double result = MathTools.convertToDecimal(3, 4);
      Assert.Equal(0.75, result);
    [Fact] //TEST2
    void TestConvertToDecimalInvalidDenominator() {
      Assert.Throws<ArgumentException>(() => MathTools.convertToDecimal(3, 0));
```

- A. Both tests will pass successfully
- B. TEST1 will pass and TEST2 will fail
- C. TESTI will fail and TEST2 will pass
- D. Both tests will fail

When the unit tests are executed, which one of the following outcomes will occur?