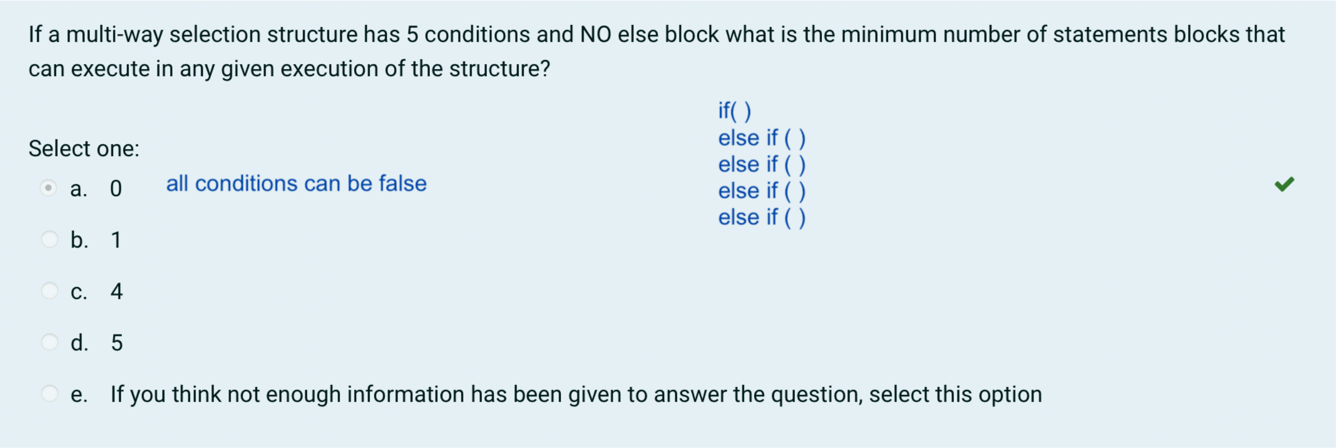
Multi-way selection structure



If a multi-way selection structure has 5 conditions and NO else block what is the minimum number of statements blocks that can execute in any given execution of the structure?

```
if( )
else if ( )
else if ( )
else if ( )
else if ( )
```

Select one:

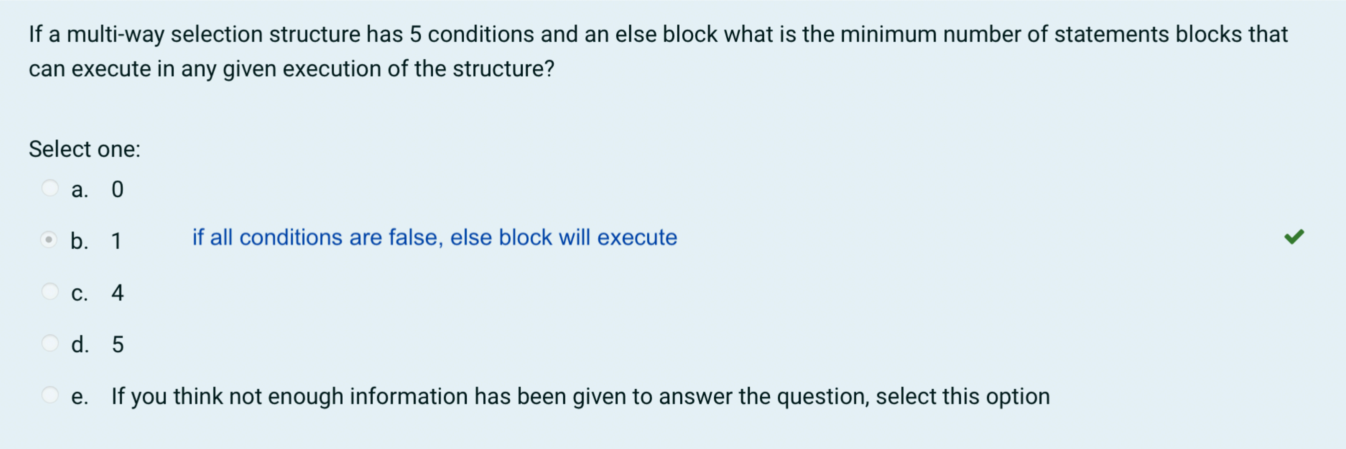
● a. 0 all conditions can be false ✓

○ b. 1

○ c. 4

○ d. 5

○ e. If you think not enough information has been given to answer the question, select this option



If a multi-way selection structure has 5 conditions and an else block what is the minimum number of statements blocks that can execute in any given execution of the structure?

Select one:

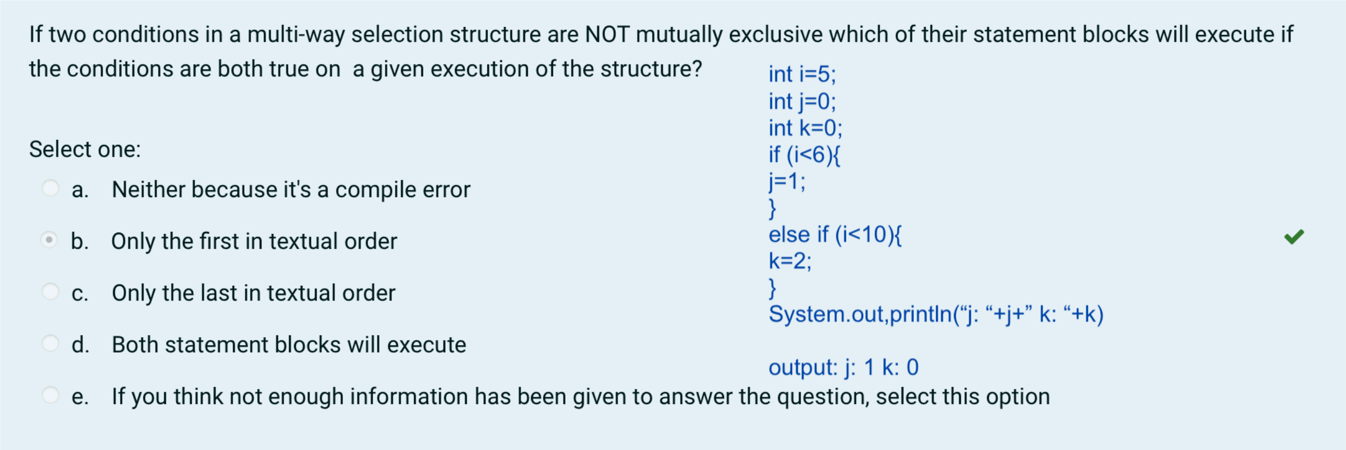
○ a. 0

● b. 1 if all conditions are false, else block will execute ✓

○ c. 4

○ d. 5

○ e. If you think not enough information has been given to answer the question, select this option



If two conditions in a multi-way selection structure are NOT mutually exclusive which of their statement blocks will execute if the conditions are both true on a given execution of the structure?

```
int i=5;
int j=0;
int k=0;
if (i<6){
j=1;
}
else if (i<10){
k=2;
}
System.out,println(“j: “+j+” k: “+k)

output: j: 1 k: 0
```

Select one:

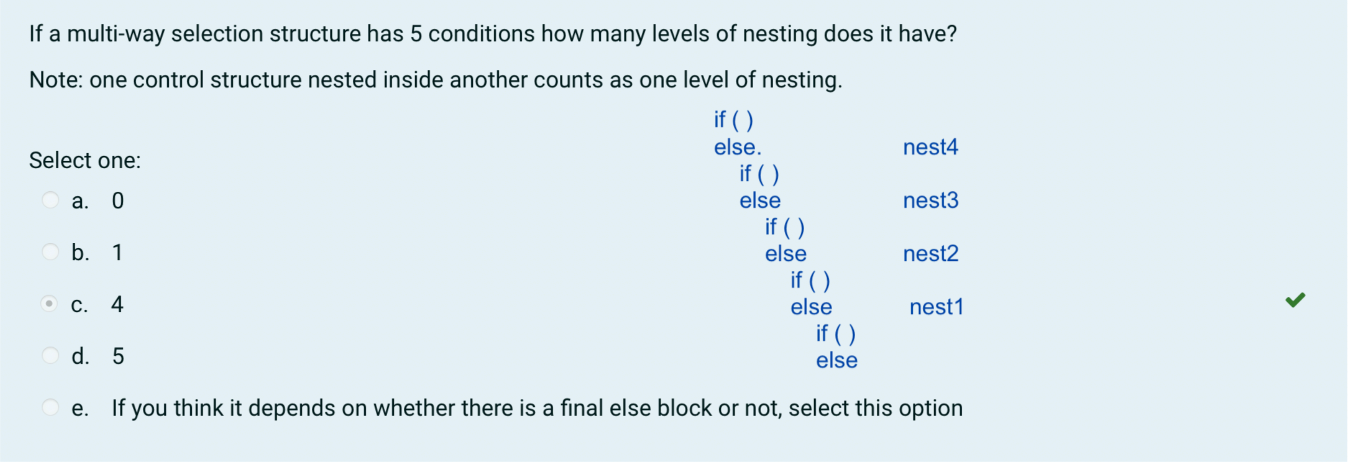
○ a. Neither because it's a compile error

● b. Only the first in textual order ✓

○ c. Only the last in textual order

○ d. Both statement blocks will execute

○ e. If you think not enough information has been given to answer the question, select this option



If a multi-way selection structure has 5 conditions how many levels of nesting does it have?

Note: one control structure nested inside another counts as one level of nesting.

```
if ( )
else.              nest4
   if ( )
   else            nest3
      if ( )
      else         nest2
         if ( )
         else       nest1
            if ( )
            else
```

Select one:

○ a. 0

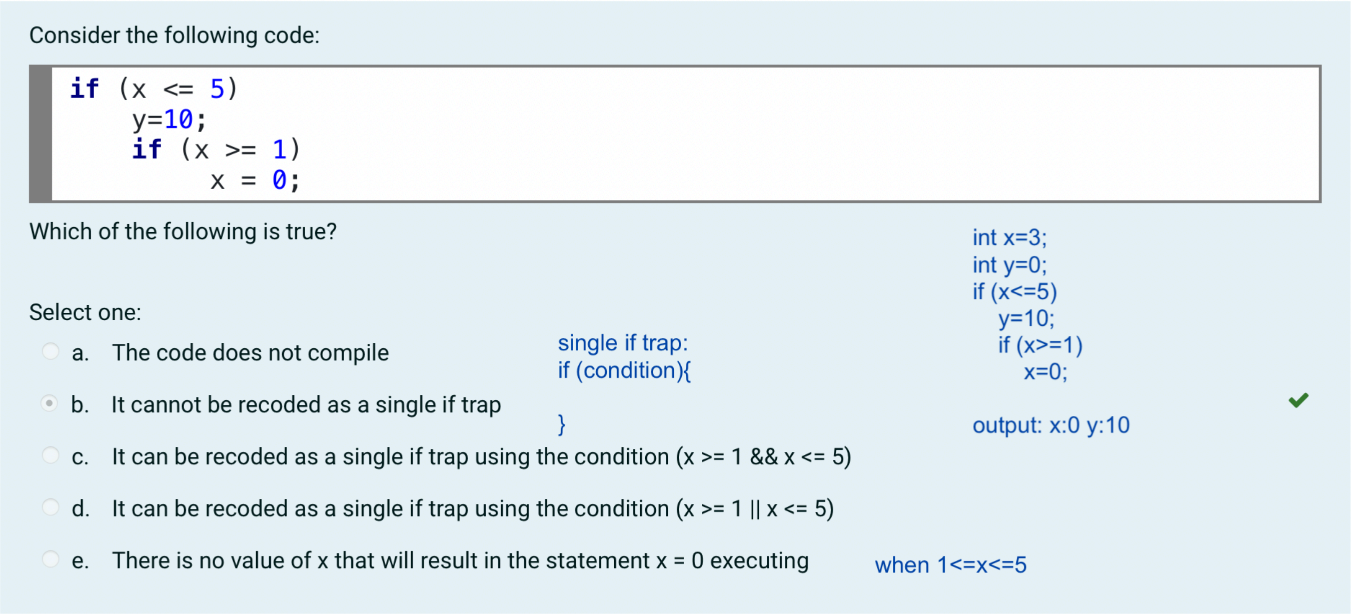
○ b. 1

● c. 4 ✓

○ d. 5

○ e. If you think it depends on whether there is a final else block or not, select this option

If trap



Consider the following code:

```
if (x <= 5)
    y=10;
    if (x >= 1)
         x = 0;
```

Which of the following is true?

```
int x=3;
int y=0;
if (x<=5)
   y=10;
   if (x>=1)
      x=0;

output: x:0 y:10
```

Select one:

○ a. The code does not compile

● b. It cannot be recoded as a single if trap ✓

○ c. It can be recoded as a single if trap using the condition (x >= 1 && x <= 5)

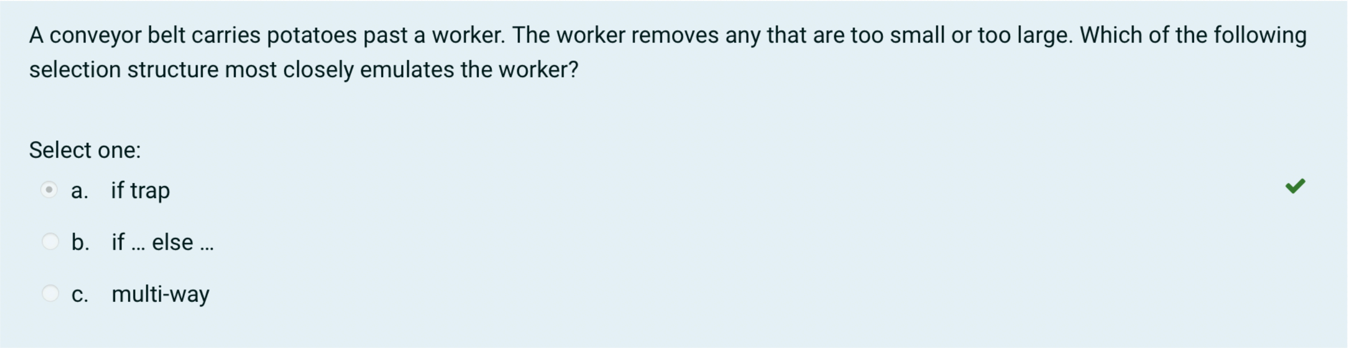
○ d. It can be recoded as a single if trap using the condition (x >= 1 || x <= 5)

○ e. There is no value of x that will result in the statement x = 0 executing

```
single if trap:
if (condition){

}
```

when 1<=x<=5



A conveyor belt carries potatoes past a worker. The worker removes any that are too small or too large. Which of the following selection structure most closely emulates the worker?

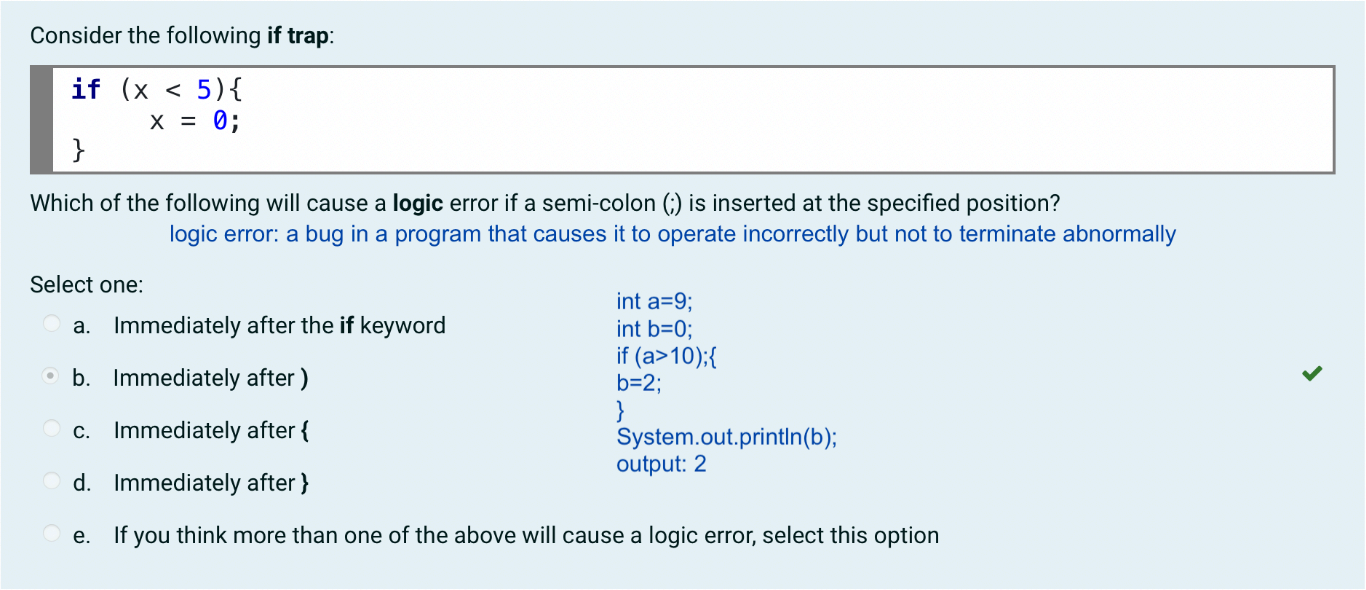
Select one:

● a. if trap ✓

○ b. if … else …

○ c. multi-way

If trap semi-colon



Consider the following **if trap**:

```
if (x < 5){
     x = 0;
}
```

Which of the following will cause a **logic** error if a semi-colon (;) is inserted at the specified position?

logic error: a bug in a program that causes it to operate incorrectly but not to terminate abnormally

Select one:

○ a. Immediately after the **if** keyword

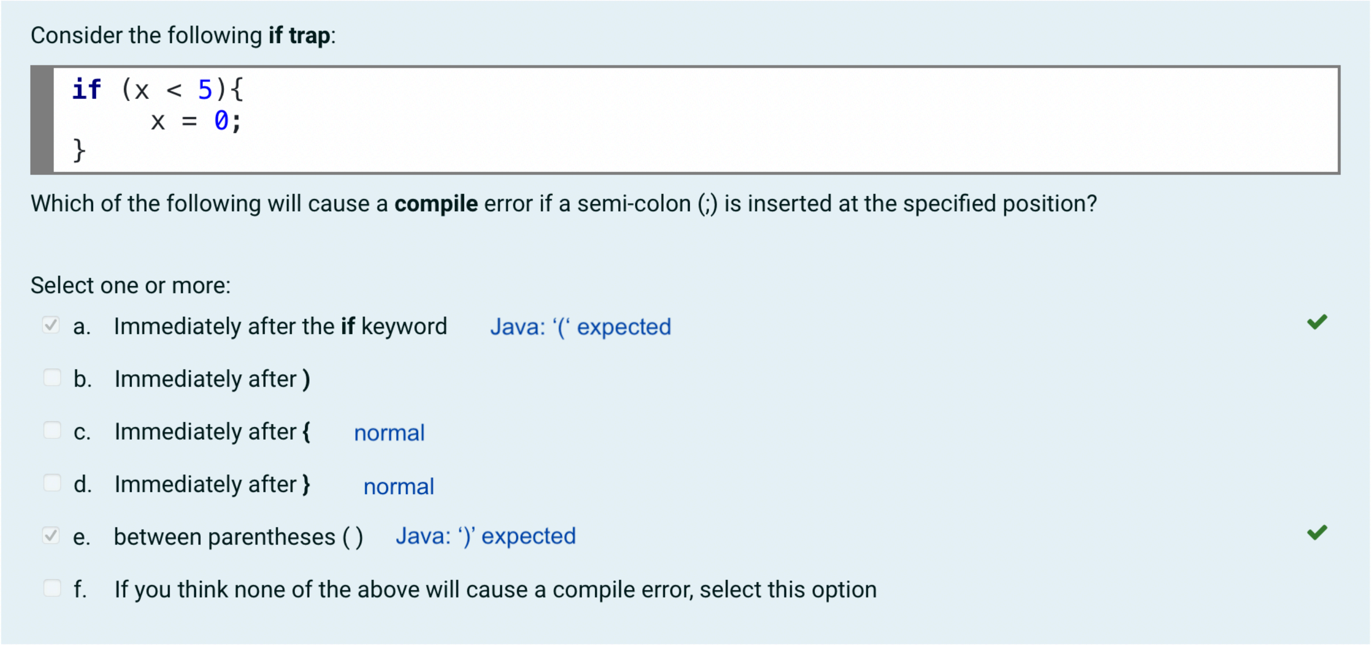
● b. Immediately after **)** ✓

○ c. Immediately after **{**

○ d. Immediately after **}**

○ e. If you think more than one of the above will cause a logic error, select this option

```
int a=9;
int b=0;
if (a>10);{
b=2;
}
System.out.println(b);
output: 2
```



Consider the following **if trap**:

```
if (x < 5){
     x = 0;
}
```

Which of the following will cause a **compile** error if a semi-colon (;) is inserted at the specified position?

Select one or more:

☑ a. Immediately after the **if** keyword Java: '(' expected ✓

□ b. Immediately after **)**

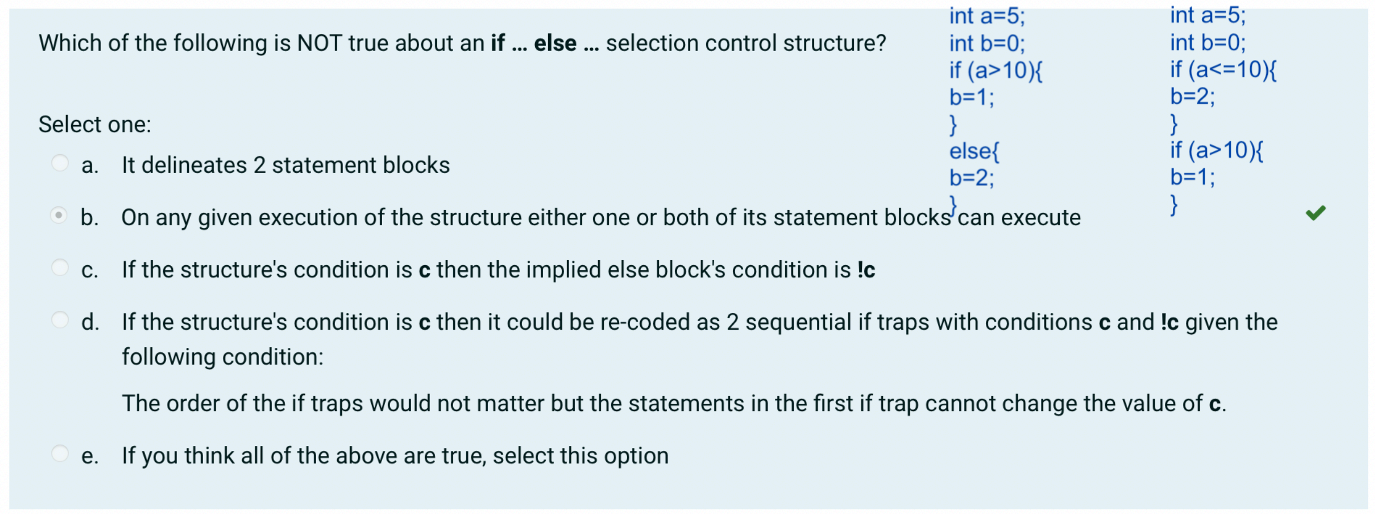
□ c. Immediately after **{** normal

□ d. Immediately after **}** normal

☑ e. between parentheses ( ) Java: ')' expected ✓

□ f. If you think none of the above will cause a compile error, select this option

If…else… selection control structure



Which of the following is NOT true about an **if … else …** selection control structure?

```
int a=5;
int b=0;
if (a>10){
b=1;
}
else{
b=2;
}
```

```
int a=5;
int b=0;
if (a<=10){
b=2;
}
if (a>10){
b=1;
}
```

Select one:

○ a. It delineates 2 statement blocks

● b. On any given execution of the structure either one or both of its statement blocks can execute ✓

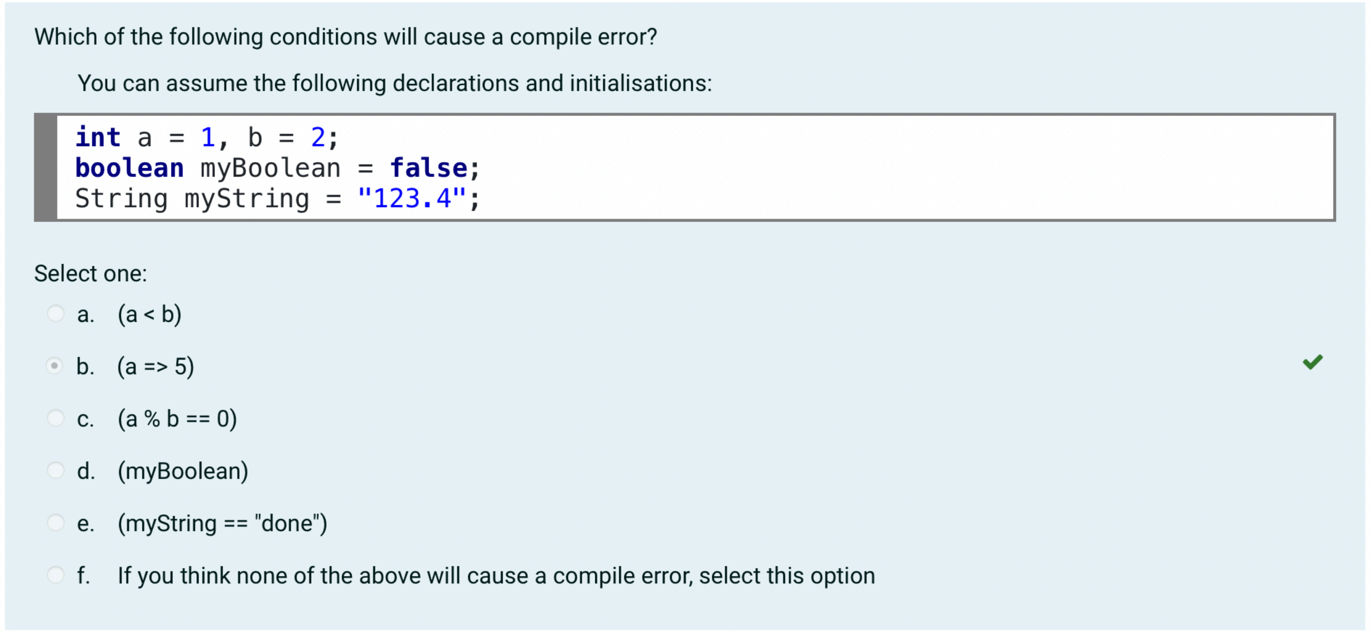
○ c. If the structure's condition is **c** then the implied else block's condition is **!c**

○ d. If the structure's condition is **c** then it could be re-coded as 2 sequential if traps with conditions **c** and **!c** given the following condition:

The order of the if traps would not matter but the statements in the first if trap cannot change the value of **c**.

○ e. If you think all of the above are true, select this option

Control structure (condition)



Which of the following conditions will cause a compile error?

You can assume the following declarations and initialisations:

```
int a = 1, b = 2;
boolean myBoolean = false;
String myString = "123.4";
```

Select one:

○ a. (a < b)

● b. (a => 5) ✓

○ c. (a % b == 0)

○ d. (myBoolean)

○ e. (myString == "done")

○ f. If you think none of the above will cause a compile error, select this option