



# Tech Info Library

## Business BASIC III: IF...THEN...ELSE

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Security: Everyone

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The IF/THEN statement can give some unexpected results. The rules for IF/THEN are:

1. When the logical expression is true, the rest of the line is executed, except:
  - A. When there is an ELSE on the same program line, execution continues to the ELSE, then goes the next numbered program line.
  - B. If there is an implicit or implied GOTO, execution continues at the target line.
2. When the logical expression is false, execution continues on the next numbered program line, except:
  - A. When there is an ELSE on the line, execution continues after the ELSE.

The following examples might help explain some of these special cases:

Example 1:

```
10 if A = 0 then print "1" : print "2"
20 print "line 20"
```

Assuming	A = 0	A <> 0
Results	1 2	line 20

If A equals 0, then the Print statements in line 10 are executed (rule 1).  
If A doesn't equal 0, then line 20 is executed (rule 2).

Example 2:

```
10 if A = 0 then 500 : print "1" : print "2"
20 print "line 20"
```

```
500 print "end"
```

Assuming	A = 0	A <> 0
Results	end	line 20 end

If A equals 0, the Print statements in line 10 are never executed; then execution transfers to line 500 (rule 1B). If A doesn't equal 0, then line 20 is executed (rule 2).

Example 3:

```
10 if A = 0 then print "1" : goto 500 : print "2"  
20 print "line 20"  
500 print "end"
```

Assuming	A = 0	A <> 0
Results	1 end	line 20 end

If A equals 0, then the first Print is executed, then the execution is transfer to line 500 (rule 1A). If A doesn't equal 0, then line 20 is executed (rule 2). The last Print statement in line 10 is never executed.

Example 4:

```
10 if A = 0 then print "1" : print "2" : else print "3" : print "4"  
20 print "line 20"
```

Assuming	A = 0	A <> 0
Results	1 2 line 20	3 4 line 20

This is a classic example of how ELSE is used. Either execute Print 1 and 2 or execute Print 3 and 4 (rules 1A, 2A).

Example 5:

```
10 if A = 0 then 500 : print "1" : print "2" : else print "3"  
20 print "line 20"  
500 print "end"
```

Assuming	A = 0	A <> 0
Results	end	3 line 20 end

Print 1 and 2 in line 10 is never executed, because if A equals 0, then

execution transfers to line 500 (rule 1B). If A doesn't equal 0, then the statements after the ELSE is executed (rule 2A).

Example 6:

```
10 if A = 0 then print "1" : goto 500 : print "2" : else print "3"  
20 print "line 20"  
500 print "end"
```

Assuming	A = 0	A <> 0
Results	1 end	3 line 20 end

If A equals 0, then Print 1 is executed, then execution is transfer to line 500 (rule 1B). If A doesn't equal 0, then the statements after the ELSE is executed (rule 2A). Print 2 statement is never executed.

Apple Tech Notes

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