

1. Describe the difference between the if/else if statement and a series of if statements. . In an if/else if statement, the conditions are tested until one is found to be true. The conditionally executed statement(s) are executed and the program exits the if/else if statement. In a series of if statements, all of the if statements execute and test their conditions because they are not connected.
2. In an if/else if statement, what is the purpose of a trailing else ? The trailing else provides code that is executed when none of the conditions in the if/else if statement are true.
3. What is a flag and how does it work? . A flag is a Boolean variable signaling that some condition exists in the program. When the flag is set to false it indicates the condition does not yet exist. When the flag is set to true it indicates that the condition does exist.
4. Can an if statement test expressions other than relational expressions? Explain. Yes. The if statement can test any value that yields a Boolean value (true or false) or a numeric value. When testing a numeric expression, a nonzero numeric value is considered true, and the value 0 is considered false.
5. Briefly describe how the && operator works. . It takes two expressions as operands and creates a single expression that is true only when both subexpressions are true.
6. Briefly describe how the || operator works. It takes two expressions as operands and creates a single expression that is true when either of the subexpressions are true.
7. Why are the relational operators called relational? . Because they test for specific relationships between items. The relationships are greater-than, less-than, equal-to, greater-than or equal-to, less-than or equal-to, and not equal-to.
8. Why do most programmers indent the conditionally executed statements in a decision structure? Fill-in-the-Blank Indentation and spacing are for the human readers of a program, not the compiler. By indenting the conditionally executed statement you are causing it to stand out visually. This is so you can tell at a glance what part of the program the if statement executes.
9. An expression using the greater-than, less-than, greater-than-or-equal to, less-than-or-equal-to, equal, or not-equal to operator is called a(n) _____ expression. . relational
10. A relational expression is either _____ or _____. true, false
11. The value of a relational expression is 0 if the expression is _____ or 1 if the expression is _____. . False, True
12. The if statement regards an expression with the value 0 as _____. False
13. The if statement regards an expression with a nonzero value as _____. True
14. For an if statement to conditionally execute a group of statements, the statements must be enclosed in a set of _____. braces { }
15. In an if/else statement, the if part executes its statement or block if the expression is _____, and the else part executes its statement or block if the expression is _____. . True, False
16. The trailing else in an if/else if statement has a similar purpose as the _____ section of a switch statement. default
17. The if/else if statement is actually a form of the _____ if statement. nested
18. If the sub-expression on the left of the _____ logical operator is false, the right sub-expression is not checked. &&

19. If the sub-expression on the left of the _____ logical operator is true, the right sub-expression is not checked. . ||
20. The _____ logical operator has higher precedence than the other logical operators. !
21. The logical operators have _____ associativity. . left-to-right
22. The _____ logical operator works best when testing a number to determine if it is within a range. &&
23. The _____ logical operator works best when testing a number to determine if it is outside a range. . ||
24. A variable with _____ scope is only visible when the program is executing in the block containing the variable's definition. block
25. You use the _____ operator to determine whether one string object is greater than another string object. . >
26. An expression using the conditional operator is called a(n) _____ expression. conditional
27. The expression that is tested by a switch statement must have a(n) _____ value. integer
28. The expression following a case statement must be a(n) _____ integer constant
29. A program will "fall through" a case section if it is missing the _____ statement.. break
30. What value will be stored in the variable t after each of the following statements executes?
- A) t = (12 > 1); _____
- B) t = (2 < 0); _____
- C) t = (5 == (3 * 2)); _____
- D) t = (5 == 5); _____ A) 1
- B) 0
- C) 0
- D) 1
42. T F The = operator and the == operator perform the same operation when used in a Boolean expression. False
43. T F A variable defined in an inner block may not have the same name as a variable defined in the outer block. False
44. T F A conditionally executed statement should be indented one level from the if statement. True
45. T F All lines in a block should be indented one level. True
46. T F It's safe to assume that all uninitialized variables automatically start with 0 as their value. False
47. T F When an if statement is nested in the if part of another statement, the only time the inner if is executed is when the expression of the outer if is true. True
48. T F When an if statement is nested in the else part of another statement, as in an if/else if, the only time the inner if is executed is when the expression of the outer if is true. True
49. T F The scope of a variable is limited to the block in which it is defined. True
50. T F You can use the relational operators to compare string objects. True

51. T F $x \neq y$ is the same as $(x > y \parallel x < y)$ True

52. T F $y < x$ is the same as $x \geq y$ False

53. T F $x \geq y$ is the same as $(x > y \&\& x = y)$ False

54. T F $x == 5 \parallel y > 3$

Assume the variables $x = 5$, $y = 6$, and $z = 8$. Indicate by circling the T or F whether each of the following conditions is true or false: True

55. T F $7 \leq x \&\& z > 4$

Assume the variables $x = 5$, $y = 6$, and $z = 8$. Indicate by circling the T or F whether each of the following conditions is true or false: False

56. T F $2 \neq y \&\& z \neq 4$

Assume the variables $x = 5$, $y = 6$, and $z = 8$. Indicate by circling the T or F whether each of the following conditions is true or false: True

57. T F $x \geq 0 \parallel x \leq y$

Assume the variables $x = 5$, $y = 6$, and $z = 8$. Indicate by circling the T or F whether each of the following conditions is true or false: True