Solutions

1. Indent the following if statements properly.

a. if (a == b)

{ if (c == d)

{

a = 1;

}

Else

{

b = 1;

}

}

Else

{

c = 1;

}

b. if (a == b)

a = 1;

if (c == d)

b = 1;

else

c = 1;

c. if (a == b) {

if (c == d)

a = 1;

b = 2;

}

else

b = 1;

d. if (a == b) {

if (c == d)

a = 1;

b = 2;

}

else {

b = 1;

if (a == d)

d = 3;

}

2. Which two of the following three if statements are equivalent?

a. if (a == b)

if (c == d) a = 1;

else b = 1;

b. if (a == b) {

if (c == d) a = 1; }

else b = 1;

c. if (a == b)

if (c == d) a = 1;

else b = 1;

a. and c. are equivalent. In both cases the else part is matching the (c == d) test.

3. Evaluate the following boolean expressions. For each of the following expressions, assume x is 10, y is 20, and z is 30. Indicate which of the following boolean expressions are always true and which are always false, regardless of the values for x, y, or z.

a. x < 10 || x > 10

b. x > y && y > x

c. (x < y + z) && (x + 10 <= 20)

d. z - y == x && Math.abs(y - z) == x

e. x < 10 && x > 10

f. x > y || y > x

g. !(x < y + z) || !(x + 10 <= 20)

h. !(x == y)) && (x != y) && (x < y || y < x)

a. false

b. false (values for x and y are irrelevant)

c. true

d. true

e. false (value for x is irrelevant)

f. true

g. false

h. true