**44-542 Object Oriented Programming**

**Conditions**

1. Evaluate each of the following expressions.

(a) (3 > 6 && 7 > 4) true false

(b) (4 > 6 || 10 < 2 \* 6) true false

(c) (7 >= 3 + 4 || 6 < 4 && 2 < 5) true false

(d) !(5 <= 4 || 6 != 5 && 10 >= 4) true false

1. Assume we have declared and initialized the variables below.

**int x = 5;**

**int y = 3;**

**int z = 2;**

**boolean a = true;**

**boolean b = false;**

Evaluate the following expressions.

(a) (x – z == y) true false

(b) (x \* z > z \* y || b) true false

(c) (x \* z < z \* y && a) true false

(d) (x \* z > z \* y && a || b) true false

(e) !(x \* z > z \* y && a || b) true false

1. Assume x and y are variables of type int. Translate each phrase into an equivalent boolean expression.

(a) x is less than 20 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) x is between 1 and 100 (inclusive) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) y is either 1 or 5 or 10 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(d) Both x and y are positive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(e) Neither x nor y is positive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Assume the following variables have been declared.

boolean isVoter, validExamScore, evenNumber;

int age, examScore, number;

Circle the value stored in the boolean variable after the execution of each set of statements.

(a) age = 30;

isVoter = age <=18;

true false

(b) age = 16;

isVoter = age <=18;

true false

(c) number = 11;

evenNumber = number % 2 == 0;

true false

(d) number = 4;

evenNumber = number % 2 == 0;

true false

(e) examScore = 60;

validExamScore = examScore >= 0 && examScore <= 100

true false

(f) examScore = 110;

validExamScore = examScore >= 0 && examScore <= 100

true false