1. ArithmeticException

It is RuntimeException not compile time error. It is possible only in integral arithmetic but not in floating point arithmetic.

The only operator which cause ArithmeticException are / and %

2. What is compound assignment?

Operation followed by assignment is called compound assignment, there are 11 compound assignment operations are possible

3. How many compound assignment operator java supports?

Java supports 11 compound assignment

+= assigns the result of addition

- = assigns the result of subtraction

/ = assigns the result of division

% = assigns the remainder of the division

\* = assigns the result of multiplication

& = assigns the result of logical AND

| = assigns the result of logical OR

^ = assigns the result of XOR

<< = assigns the result of signed left bit shift

>> = assigns the result of signed right bit shift

>>> = assigns the result of unsigned right bit shift

4. What is the difference between these two?

1. byte b = 1;

b = b+1;

2. byte b = 1;

b +=1;

5. What is the output?

1. b = 4;

b &= 4;

2. b = 4;

b |= 4;

3. b = 4;

b ^= 4;

4. b = 4;

b >>= 4;

5. b = 4;

b <<= 4;

6. b = 4;

b >>>= 4; //signed right shift, there in no signed left operator

6. What is the output of the following program?

int a, b, c, d;

a = b = c = d = 20;

a += b -= c \*= d /= 2;

*//d = 20 / 2 = 10*

*//c = 20 \* 10 = 200*

*//b = 20 - 200 = -180*

*//a = 20 + (-180) = -160*

System.***out***.println(**"a=: "**+a+ **", b=: "**+b+**", c=: "**+c+**", d=: "**+d);

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Bitwise Operator:

7. Explain bitwise operator(&, |, ^)

& - returns true if both of the operands are true

| - returns true if atleast any of the operands are true

^ - returns true if both operands are different

We can apply this operator for both integral and boolean operands

8. Is it possible to apply bitwise operator to integral operands?

Yes.

Example: System.out.println(4&5); //4

because: 100

101

=====

100

9. What is bitwise complement Operator(~)

We can apply this operator only for integral types but not for boolean types.

Examples(Solve the problem):

System.***out***.println(~4);

*//0 0000...00100*

*//1 1111...11011*

*//the last bit is signed and it is negative number so we need to find the 2's complement*

*//which is*

*//1 0000...00100*

*// 1*

*//==============*

*//1 0000...00101*

*//-5*

System.***out***.println(**"Bitwise complement of -4=:"**+~-4);

*//1 0000...00100 four*

*//1 1111...11011 2's complement*

*// 1 + 1*

*//1 1111...11100*

*//0 0000...00011 //negate*

System.***out***.println(**"Bitwise complement of -5=:"**+~-5);

*//1 00000...00101*

*//1 11111...11010 //2's complement*

*// 1*

*//================*

*//1 11111...11011*

*//0 00000...00100*

*//4*

What is boolean complement operator?

Used to toggle the boolean values not integral values (!)