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JAVA 25 Q

ASSIGNMENT JAVA

```
public class Q01{
	public static void main(String[] args){
		int a = 4;
		int b = 6;
		System.out.println("Before Swapping: \nA = " + a + "\tB = " + b);
		a = a ^ b;
		b = a ^ b;
		a = a ^ b;
		System.out.println("After Swapping: \nA = " + a + "\tB = " + b);
	}
}
```

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```
public class Q02{
	public static void main(String[] args){
		int a = 9, b = 10;
		check(a);
		check(b);
	}

	public static void check(int a){
		if((a&1) == 0){
			System.out.println(a + " is even");
		} else {
			System.out.println(a + " is odd");
		}
```

```
	}
}

-------------------------------XXXXXXXXXXXXXXXXXXXXX----------------

public class Q03{
	public static void main(String[] args){
		int x = 123456;
		int res = 0;
		while(x!=0){
			res = res + (x%10);
			x = x/10;
		}
		System.out.println("Sum: " + res);
	}
}
------------------XXXXXXXXXXXXXXXXXXXXXX------------
public class Q04{
	public static void main(String[] args){
		int n = 15;

		if(n<0){
			n = -n;
		}

		while(n>3){
			n = (n & 3) + (n >> 2);
		}

		if(n==0 || n==3)
			System.out.println("Division by 3");
```

```
                else
                        System.out.println("Not division by 3");

        }
}
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public class Q05{
        public static void main(String[] args){
                int x = 3, y = 9;
                System.out.println("Before Swapping: \nX = " + x + "\nY = " + y);
                x += y;
                y -= x;
                y = -y;
                x -= y;
                System.out.println("After Swapping: \nX = " + x + "\nY = " + y);
        }
}

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public class Q06{
        public static void main(String[] args){
                int x=8, y=4, z=1;
                int res = ((x>y && x>z)? x : (y>x && y>z)? y : z);
                System.out.println(res + " is the largest number.");
        }
}

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import java.util.Scanner;
```

```
public class Q07{
	public static void main(String[] args){
		Scanner sc = new Scanner (System.in);
		int y = sc.nextInt();
		if(y%400==0 || (y%4==0 && y%100!=0))
			System.out.println(y + " is a leap year.");
		else
			System.out.println(y + " is not a leap year.");
	}
}
```

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```
public class Q08{
	public static void main(String[] args){
		boolean x = true, y = false, z = true;
		check(x,y,z);
		x = true; y = false; z = false;
		check(x,y,z);
	}

	public static void check(boolean a, boolean b, boolean c){
		if((a && (b||c)) || (c && (a||b)) || (b && (a||c))){
			System.out.println("true");
		} else {
			System.out.println("false");
		}
	}
}
```

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```
public class Q09{
	public static void main(String[] args){
		int x = 40, y = 52;
		check(x);
		check(y);
	}

	public static void check(int a){
		System.out.println((a>=20 && a<=50)? a + " lies in the range." : a + " doesn't lie within the range");
	}
}
```

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```
public class Q10{
	public static void main(String[] args){
		char x = 'a';
		check(x);
		x = 'q';
		check(x);
		x = 'A';
		check(x);
		x = 'R';
		check(x);
	}

	public static void check(char a){
		char ch = Character.toLowerCase(a);
		String str = (ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch =='u')? a + " is a vowel." : a + " is a consonant";
		System.out.println(str);
```

```
	}
}
```

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```
public class Q11{
	public static void main(String[] args){
		check(8);
		check(7);
	}

	public static void check(int a){
		if(a<0) a = -a;
		if((a & (a-1))==0)
			System.out.println(a + " is a power of two");
		else
			System.out.println("Oops! " + a + " is not a power of two");
	}
}
```

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```
public class Q12{
	public static void main(String[] args){
		check(7);
		check(20);
		check(-9);
	}

	public static void check(int a){
		//Use bitwise left shift ( << )
```

```
                int result = a << 3;
                System.out.println(result);
        }
}
```

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```
public class Q13{
        public static void main(String[] args){
                abs(7);
                abs(-20);
        }

        public static void abs(int num){
                int mask = num >> 31;
                int abs = (num + mask) ^ mask;
                System.out.println(abs);
        }
}

// 00000000 00000000 00000000 00010100
// 11111111 11111111 11111111 11101011
// 11111111 11111111 11111111 11101100
// 11111111 11111111 11111111 11111111
// 00000000 00000000 00000000 00010101
// 11111111 11111111 11111111 11101010

// 11111111 11111111 11111111 11101011
// 11111111 11111111 11111111 11111111
// 00000000 00000000 00000000 00010100
```

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```
public class Q14{
	public static void main(String[] args){
		setbits(7);
		setbits(12);
	}

	public static void setbits(int num){
		int count = 0;
		while(num > 0){
	num = (num & (num - 1));
	count++;
     }
		System.out.println(count);
	}
}

// 0111 0110
// 0110 1
// 0110 0101
// 0100 2
// 0100 0011
// 0000 3
```

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```
public class Q15{
	public static void main(String[] args){
		swapper(10);
```

```
                swapper(9);
        }

        public static void swapper(int x){
           int evenBits = (x & 0xAAAAAAAA) >> 1; // Get even bits and shift right
    int oddBits = (x & 0x55555555) << 1;   // Get odd bits and shift left
    int res = (evenBits | oddBits);
                System.out.println(res);
        }
}

// 1001
// 10101010 10101010 10101010 10101010
//                    1001
// 00000000 00000000 00000000 00001000
// 00000000 00000000 00000000 00000100

// 01010101 01010101 01010101 01010101
//                    1001
// 00000000 00000000 00000000 00000001
// 00000000 00000000 00000000 00000010
// 00000000 00000000 00000000 00000010
// 00000000 00000000 00000000 00000100
// 00000000 00000000 00000000 00000110


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public class Q16{
        public static void main(String[] args){
                pnz(12);
                pnz(-11);
```

```
		pnz(0);
	}
	public static void pnz(int x){
		String res = (x==0)? "zero" : (x>0)? "positive" : "negative";
		System.out.println(res);
	}
}
```

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```
public class Q17{
	public static void main(String[] args){
		minfour(1,2,3,4);
	}

	public static void minfour(int x, int y, int z, int m){
		int res = (x<y && x<z && x<m)? x:(z<y && z<x && z<m)? z:(y<z && y<x && y<m)? y :
m;
		System.out.println(res);
	}
}
```

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```
public class Q18{
	public static void main(String args[]){
		check(50);
		check(39);
	}

	public static void check(int a){
```

```
		String result = (a>=40)? "Pass" : "Fail";
		System.out.println(result);
	}
}
```

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```
public class Q19{
	public static void main(String args[]){
		check('a');
		check('A');
		check('1');
	}

	public static void check(char A){
		int a = (int) A;
		String result = (a>64 && a<91)? "Uppercase" : (a>96 && a<123)? "Lowercase" :
"Not a character";
		System.out.println(result);
	}
}}
```

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```
public class Q20{
	public static void main(String args[]){
		check(20);
		check(-120);
	}

	public static void check(int A){
```

```
                int result = (A>0)? A : -A;
                System.out.println("absolute value: " + result);
        }
}
```

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```
public class Q21{
        static public void main(String me[]){
                int x = 5;
                System.out.println(-~x);
        }
}
```

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```
import java.util.Scanner;
public class Q22{
        public static void main(String[] args){
                Scanner sc = new Scanner (System.in);
                System.out.print("Enter first number: ");
                int a = sc.nextInt();
                System.out.print("Enter second number: ");
                int b = sc.nextInt();
                System.out.println("MENU: ");
                System.out.println("1. ADDITION ");
                System.out.println("2. SUBTRACTION ");
                System.out.println("3. MULTIPLICATION ");
                System.out.println("4. DIVISION ");
                System.out.println("5. FIND REMAINDER ");
                System.out.print("Enter your Option: ");
```

```
                int c = sc.nextInt();
                while(c!=6){
                        switch(c){
                                case 1: System.out.println("Addition of " + a + " + " + b + " = " +
(a+b));
                                                break;
                                case 2: System.out.println("Difference between " + a + " - " + b + "
= " + (a-b));
                                                break;
                                case 3: System.out.println("Multiplication of " + a + " x " + b + " = "
+ (a*b));
                                                break;
                                case 4: System.out.println("Quotient in division of " + a + " / " + b
+ " = " + ((float)a/(float)b));
                                                break;
                                case 5: System.out.println("Remainder in division of " + a + " and
" + b + " = " + ((float)a%(float)b));
                                                break;
                                default:System.out.println("INVALID OPTION");
                                                break;
                        }
                        System.out.print("Enter your Option: ");
                        c = sc.nextInt();
                }
                System.out.println("EXITING PROGRAMMING!");
        }
}
```

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```
public class Q23{
        public static void main(String[] args){
                int a = 9, b = 10;
```

```
                check(a);
                check(b);
        }

        public static void check(int a){
                if((a&1) == 0){
                        System.out.println(a + " is even");
                } else {
                        System.out.println(a + " is odd");
                }
        }
}
```

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```
public class Q24{
   public static void main(String[] args) {
      for (int i = 1; i <= 100; i++) {
         if ((i & 1) == 0) {
            System.out.print(i + " ");
         }
      }
   }
}
```

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```
public class Q25{
        static public void main(String me[]){
```

```
                int x = 1534, rev = 0;
                int temp = x;
                while(x!=0){
                        rev = rev * 10 + x % 10;
                        x = x/10;
                }
                System.out.println("Reverse of " + temp + " is " + rev);
        }
}
```
