

Lesson 2 Problem Set

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Do these problems for additional practice and challenge.

1. **Prime Number Checker:** Using your new understanding of loops, create a program that will determine if a given number is prime. For example, if given the input 37, the program should print **true**. Similarly, if the given input is 10, the program should print out **false**.

```
public class prime{
    public static void main(String[] args){

        int num = 37;
        boolean isPrime;

        //write your code here

        //Should print out true
        System.out.println(isPrime);

    }
}
```

2. **Exponential Calculator:** The expression 2^3 is called an exponent and is evaluated by multiplying the bottom number by itself the number of times the superscript states. In this case, $2^3 = 2 \times 2 \times 2 = 8$. Write a program that will evaluate exponents given the base (the bottom number) and the exponent (the superscript number).

```
public class exp_calc{
    public static void main(String[] args){
```

```

int base = 2;
int exp = 8;
int value;

//write your code here


//should print out 256
System.out.println(value);

    }
}

```

3. **Greatest Common Factor:** Write a program that given two numbers, prints out the greatest common factor of those two numbers.

```

public class gcf{
    public static void main(String[] args){

        int num1 = 732;
        int num2 = 44;
        int gcf;

        //start writing code here


        //should print out 4
        System.out.println(gcf);

    }
}

```