

```

// Ex. 2.6: Product.java
// Calculate the product of three integers.
import java.util.Scanner; // program uses Scanner

public class Product {
    public static void main(String[] args) {
        // create Scanner to obtain input from command window
        Scanner input = new Scanner(System.in);

        System.out.print("Enter first integer: "); // prompt for input
        int x = input.nextInt(); // read first integer

        System.out.print("Enter second integer: "); // prompt for input
        int y = input.nextInt(); // read second integer

        System.out.print("Enter third integer: "); // prompt for input
        int z = input.nextInt(); // read third integer

        int result = x * y * z; // calculate product of numbers

        System.out.printf("Product is %d\n", result);
    } // end method main
} // end class Product

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```
// Exercise 2.14 Solution: Printing.java
// Prints the numbers 1 through 4 several ways.
```

```
public class Printing {
    public static void main(String[] args) {
        System.out.print("Part (a): ");

        // one System.out.println statement
        System.out.println("1 2 3 4");

        System.out.print("Part (b): ");

        // four System.out.print statements
        System.out.print("1 ");
        System.out.print("2 ");
        System.out.print("3 ");
        System.out.print("4");
        System.out.println();

        System.out.print("Part (c): ");

        // one System.out.printf statement
```

```

    System.out.printf("%d %d %d %d%n", 1, 2, 3, 4);
} // end main
} // end class Printing

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// Exercise 2.15 Solution: Calculate.java
// Prints the sum, product, difference and quotient of two numbers.
import java.util.Scanner;

public class Calculate {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter first integer: "); // prompt for input
        int number1 = input.nextInt(); // read first integer
    }
}

```

```

System.out.print("Enter second integer: "); // prompt for input
int number2 = input.nextInt(); // read second integer

// display results
System.out.printf("%nSum is %d%n", (number1 + number2));
System.out.printf("Product is %d%n", (number1 * number2));
System.out.printf("Difference is %d%n", (number1 - number2));
System.out.printf("Quotient is %d%n", (number1 / number2));
} // end main
} // end class Calculate

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// Exercise 2.16 Solution: Larger.java
// Program that determines the larger of two numbers.
import java.util.Scanner;

```

```

public class Larger {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter first integer: "); // prompt for input
        int number1 = input.nextInt(); // read first number

        System.out.print("Enter second integer: "); // prompt for input
        int number2 = input.nextInt(); // read second number

        if (number1 > number2) {
            System.out.printf("%d is larger%n", number1);
        }

        if (number1 < number2) {
            System.out.printf("%d is larger%n", number2);
        }

        if (number1 == number2) {
            System.out.println("These numbers are equal");
        }
    } // end main
} // end class Larger

```

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```
// Exercise 2.17 Solution: Calculate2.java
```

```
// Make simple calculations on three integers.
```

```
import java.util.Scanner;
```

```
public class Calculate2 {
```

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

```
        Scanner input = new Scanner(System.in);
```

```
        System.out.print("Enter first integer: "); // prompt for input
```

```
        int number1 = input.nextInt(); // read first number
```

```
        System.out.print("Enter second integer: "); // prompt for input
```

```
        int number2 = input.nextInt(); // read second number
```

```
        System.out.print("Enter third integer: "); // prompt for input
```

```
        int number3 = input.nextInt(); // read third number
```

```
        // determine largest value
```

```
        int largest = number1; // assume number1 is the largest
```

```
        if (number2 > largest) { // determine whether number2 is larger
```

```
            largest = number2;
```

```
        }
```

```
if (number3 > largest) { // determine whether number3 is larger
    largest = number3;
}

// determine smallest value
int smallest = number1; // assume number1 is the smallest

if (number2 < smallest) { // determine whether number2 is smallest
    smallest = number2;
}

if (number3 < smallest) { // determine whether number3 is smallest
    smallest = number3;
}

// perform calculations
int sum = number1 + number2 + number3;
int product = number1 * number2 * number3;
int average = sum / 3;

// print results
System.out.printf("%nFor the numbers %d, %d and %d%n",
    number1, number2, number3);
System.out.printf("Largest is %d%n", largest);
System.out.printf("Smallest is %d%n", smallest);
System.out.printf("Sum is %d%n", sum);
System.out.printf("Product is %d%n", product);
System.out.printf("Average is %d%n", average);
} // end main
} // end class Calculate2
```



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} // end main
} // end class Shapes
```

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```
// Exercise 2.24 Solution: LargeSmall.java
// Program calculates the largest and smallest
// of five integers entered one at a time.
```

```
import java.util.Scanner;
```

```
public class LargeSmall {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter first number: "); // prompt for input
        int firstNumber = input.nextInt(); // read first number
```

```
// initially firstNumber is the smallest and the largest
int smallest = firstNumber;
int largest = firstNumber;

System.out.print("Enter second number: "); // prompt for input
int secondNumber = input.nextInt(); // read second number

// determine whether secondNumber is the smallest
if (secondNumber < smallest) {
    smallest = secondNumber;
}

// determine whether secondNumber is the largest
if (secondNumber > largest) {
    largest = secondNumber;
}

System.out.print("Enter third number: "); // prompt for input
int thirdNumber = input.nextInt(); // read third number

// determine whether thirdNumber is the smallest
if (thirdNumber < smallest) {
    smallest = thirdNumber;
}

// determine whether thirdNumber is the largest
if (thirdNumber > largest) {
    largest = thirdNumber;
}

System.out.print("Enter fourth number: "); // prompt for input
```

```
int fourthNumber = input.nextInt(); // read fourth number

// determine whether fourthNumber is the smallest
if (fourthNumber < smallest) {
    smallest = fourthNumber;
}

// determine whether fourthNumber is the largest
if (fourthNumber > largest) {
    largest = fourthNumber;
}

System.out.print("Enter fifth number: "); // prompt for input
int fifthNumber = input.nextInt(); // read fifth number

// determine whether fifthNumber is the smallest
if (fifthNumber < smallest) {
    smallest = fifthNumber;
}

// determine whether fifthNumber is the largest
if (fifthNumber > largest) {
    largest = fifthNumber;
}

// display results
System.out.printf("Numbers input: %d %d %d %d %d\n\n", firstNumber,
    secondNumber, thirdNumber, fourthNumber, fifthNumber);
System.out.printf("Smallest number is: %d\n", smallest);
System.out.printf("Largest number is: %d\n", largest);
} // end main
```

```
} // end class LargeSmall
```

```
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```
// Exercise 2.25 Solution: OddEven.java
// Program that determines if a number is odd or even.
```

```
import java.util.Scanner;

public class OddEven {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter integer: "); // prompt for input
        int number = input.nextInt(); // read number

        if (number % 2 == 0) {
            System.out.println("Number is even");
        }
    }
}
```

```

    }

    if (number % 2 != 0) {
        System.out.println("Number is odd");
    }
} // end main
} // end class OddEven

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// Exercise 2.26 Solution: Multiple.java
// Program determines if the first number entered is a multiple
// of the second number entered.
import java.util.Scanner;

public class Multiple {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

```

```

System.out.print("Enter first number: "); // prompt for input
int firstNumber = input.nextInt(); // read first number

System.out.print("Enter second number: "); // prompt for input
int secondNumber = input.nextInt(); // read second number

// determine whether firstNumber is a multiple of secondNumber
if (firstNumber % secondNumber == 0) {
    System.out.printf("%d is a multiple of %d%n",
        firstNumber, secondNumber);
}

if (firstNumber % secondNumber != 0) {
    System.out.printf("%d is not a multiple of %d%n",
        firstNumber, secondNumber);
}
} // end main
} // end class Multiple

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