

- On paper, evaluate the following Java statements and record the results: $-\text{Math.abs}(-1.23)$
 $-\text{Math.pow}(3, 2)$ $-\text{Math.sqrt}(121.0)$ $-\text{Math.sqrt}(256.0)$ $-\text{Math.abs}(\text{Math.min}(-3, -5))$

Main.java	Output
<pre> 1- public class MathOperations { 2- public static void main(String[] args) { 3 double result1 = Math.abs(-1.23); 4 System.out.println("Math.abs(-1.23) = " + result1); 5 double result2 = Math.pow(3, 2); 6 System.out.println("Math.pow(3, 2) = " + result2); 7 double result3 = Math.sqrt(121.0) - Math.sqrt(256.0); 8 System.out.println("Math.sqrt(121.0) - Math.sqrt(256.0) = " + result3); 9 int smallerValue = Math.min(-3, -5); 10 int absoluteValue = Math.abs(smallerValue); 11 System.out.println("Math.abs(Math.min(-3, -5)) = " + absoluteValue); 12 } 13 } 14 </pre>	<pre> java -cp /tmp/IewWU8Vlsy/MathOperations Math.abs(-1.23) = 1.23 Math.pow(3, 2) = 9.0 Math.sqrt(121.0) - Math.sqrt(256.0) = -5.0 Math.abs(Math.min(-3, -5)) = 5 === Code Execution Successful === </pre>

- Consider an integer variable named age .uuuuuuuuUse Math.max and Math.min methods to answer the following questions: $-\text{What expression would replace negative ages with 0?}$
 $-\text{What expression would limit the maximum age to 40?}$

Main.java	Output
<pre> 1- public class AgeManipulation { 2- public static void main(String[] args) { 3 int age1 = -5; 4 int age2 = 45; 5 age1 = Math.max(0, Math.min(age1, 40)); 6 age2 = Math.max(0, Math.min(age2, 40)); 7 System.out.println("Age 1 after manipulation: " + age1); // Should be 0 8 System.out.println("Age 2 after manipulation: " + age2); // Should be 40 9 } 10 } 11 </pre>	<pre> java -cp /tmp/yGMJvXzM09/AgeManipulation Age 1 after manipulation: 0 Age 2 after manipulation: 40 === Code Execution Successful === </pre>

- A person's body mass index (BMI) is computed like this: • Create a new project and add the ComputeBMI.java file to the project •Write a program that computes the BMI and rounds off the BMI

Main.java	Output
<pre> 1- public class ComputeBMI { 2- public static void main(String[] args) { 3 double weight = 70; 4 double height = 1.75; 5 double bmi = weight / (height * height); 6 double roundedBMI = Math.round(bmi * 100.0) / 100.0; 7 System.out.println("Weight: " + weight + " kg"); 8 System.out.println("Height: " + height + " m"); 9 System.out.println("BMI: " + roundedBMI); 10 } 11 } 12 </pre>	<pre> java -cp /tmp/D2DsejEJs/ComputeBMI Weight: 70.0 kg Height: 1.75 m BMI: 22.86 === Code Execution Successful === </pre>