Widening Casting

public class Main {

public static void main(String[] args) {

int myInt = 9;

double myDouble = myInt; // Automatic casting: int to double

System.out.println(myInt);

System.out.println(myDouble);

}

}

o/p

9  
9.0

## Narrowing Casting

public class Main {

public static void main(String[] args) {

double myDouble = 9.78;

int myInt = (int) myDouble; // Manual casting: double to int

System.out.println(myDouble); // Outputs 9.78

System.out.println(myInt); // Outputs 9

}

}

O/P

9.78  
9

class Test {

public static void main(String[] args) {

// Casting conversion (5.4) of a float literal to

// type int. Without the cast operator, this would

// be a compile-time error, because this is a

// narrowing conversion (5.1.3):

int i = (int)12.5f;

// String conversion (5.4) of i's int value:

System.out.println("(int)12.5f==" + i);

// Assignment conversion (5.2) of i's value to type

// float. This is a widening conversion (5.1.2):

float f = i;

// String conversion of f's float value:

System.out.println("after float widening: " + f);

// Numeric promotion (5.6) of i's value to type

// float. This is a binary numeric promotion.

// After promotion, the operation is float\*float:

System.out.print(f);

f = f \* i;

// Two string conversions of i and f:

System.out.println("\*" + i + "==" + f);

// Method invocation conversion (5.3) of f's value

// to type double, needed because the method Math.sin

// accepts only a double argument:

double d = Math.sin(f);

// Two string conversions of f and d:

System.out.println("Math.sin(" + f + ")==" + d);

}

}

O/P

(int)12.5f==12

after float widening: 12.0

12.0\*12==144.0

Math.sin(144.0)==-0.49102159389846934

MCQ’s

**1) What are the Type Conversions available in Java language?**

A) Narrowing Type Conversion

B) Widening Type Conversion

C) A and B

D) None of the above

Answer [=]

**C**

**2) What is a higher data type in Java language?**

A) A data type which holds more data than other data types

B) A data type whose size is more than other data types

C) A data type which can hold more precision digits than other data types

D) All the above

Answer [=]

**D**

**Explanation:**

**Float is bigger than short**

**double is bigger than float**

**3) What is a Widening Type Conversion in Java?**

A) Conversion of data from higher data type to lower data type

B) Conversion of data from lower data type to higher data type

C) Conversion of data from any data type to any data type

D) None of the above

Answer [=]

**B**

**4) What is a Narrowing Type Conversion in Java?**

A) Conversion of data from lower data type to higher data type

B) Conversion data from a higher data type to a lower data type

C) Conversion of data from any data type to any data type

D) None of the above

Answer [=]

**B**

**5) What is the result of a Narrowing type conversion?**

A) Loss of data

B) Addition of data

C) Corruption of data

D) None of the above

Answer [=]

**A**

**Explanation:**

**int a =(int)1.2f;**

**//a holds 1**

**6) What is the result of a Widening Type Conversion in Java?**

A) Loss of data

B) Gain of data

C) No change

D) None of the above

Answer [=]

**C**

**Explanation:**

**int a=456;**

**float b = a; //No change of data**

**//b holds 456.0;**

**7) Type promotion in Java usually refers to \_\_\_\_.**

A) Narrowing Type Conversion

B) Widening Type Conversion

C) No Type Conversion

D) None of the above

Answer [=]

**B**

**Explanation:**

**All integers are promoted to int or long.**

**All characters are promoted to int from char or long from char.**

**All float numbers are promoted to double.**

**8) Type Casting in Java usually refers to \_\_\_\_?**

A) Narrowing Type Conversion

B) Widening Type Conversion

C) No Type Conversion

D) None of the above

Answer [=]

**A**

**9) Explicit Type Conversion in Java refers to \_\_\_?**

A) Narrowing Type Conversion

B) Widening Type Conversion

C) No Type Conversion

D) None of the above

Answer [=]

**A**

**10) Implicit Type Conversion in Java is also called \_\_\_?**

A) Narrowing Type Conversion

B) Widening Type Conversion

C) No Type Conversion

D) None of the above

Answer [=]

**B**

**Explanation:**

**Implicit type conversion is an Automatic Type Promotion from a lower data type to a higher data type.**