



Victoria University  
of Wellington, New Zealand  
*Te Whare Wananga o te  
Upoko o te Ika a Maui  
Aotearoa*



# SWEN221: Software Development 20: Java Puzzlers

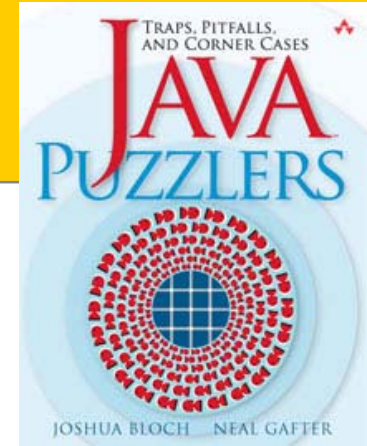
David J. Pearce & Nicholas Cameron & James Noble  
Engineering and Computer Science, Victoria University

# Java Puzzlers

How well do you know Java?

(See "Java Puzzlers", Addison Wesley)

# About Java



- Java
  - It's a **complicated** language!
  - Most programmers (even really good ones) **don't know all the rules**
- Java Language Specification (JLS)
  - Provides a (nearly) complete **guide to the rules**.
    - See:

[http://java.sun.com/docs/books/jls/third\\_edition/html/j3TOC.html](http://java.sun.com/docs/books/jls/third_edition/html/j3TOC.html)

# Puzzle #1 (Division)

- What does this code print?

```
int x = (-1 / 2);  
int y = (1 / 2);  
  
System.out.println(x + "," + y);
```

A) 0,1

B) -1,0

C) 0, 0

# Puzzle #2 (Post Increment)

- What does this code print?

```
int x = 0;  
int y = x++ + x++ + x++;  
  
System.out.println(y);
```

A) 0

B) 2

C) 3

# Puzzle #3 (oddity)

- How to check an integer is odd?

```
boolean isOdd(int x) {  
    return (x%2) == 1;  
}
```

- Does this method work?

A) Yes

B) No

C) Don't know

# Puzzle #4 (Binary Operators)

- What does this code print?

```
int x = 3 * 11 / 2;  
int y = 11 / 2 * 3;  
System.out.println(x + "," + y);
```

A) 15,16

B) 16,1

C) 16,15

# Puzzle #5 (Finally)

- What does this code print?

```
static void main(String[] args) {  
    System.out.println(f());  
}  
  
static boolean f() {  
    try { return true; }  
    finally { return false; }  
}
```

A) true      B) false      C) doesn't compile



# Puzzle #6 (Exceptions)

- What does this code print?

```
try {  
    try {  
        String x = null;  
        x.toString();  
    } catch (NullPointerException e1) {  
        int x = 10 / 0;  
    } catch (ArithmeticException e2) {  
        System.out.println("1");  
    }  
} catch (ArithmeticException e2) {  
    System.out.println("2");  
}
```

A) 1

B) 2

C) other

# Puzzle #7 (Constructors)

- What does this code print?

```
public class Test {  
    Test() { f(); }  
    void f() {}  
}  
  
public class Test2 extends Test {  
    int i = 1;  
    void f() { System.out.println(i); }  
  
    public static void main(String[] args) {  
        new Test2();  
    }  
}
```

A) 0

B) 1

C) nothing

# Puzzle #8 (Multiplication)

- What does this code print?

```
public class Test {  
    public static void main(String[] args) {  
        int x = 60 * 60 * 24 * 1000 * 1000;  
  
        System.out.println(x);  
    }  
}
```

A) 86400000000000

B) 1

C) other

# Puzzle #9 (Sums)

- What does this code print?

```
int[] arr = {77, 077, 0x4D};  
int sum = 0;  
  
for(int i : arr) {  
    sum = sum + i;  
}  
  
System.out.println(sum);
```

A) 232

B) 231

C) 217

# Puzzle #10 (Static Blocks)

- What does this code print?

```
public class Test {  
    static Test t1 = new Test();  
    static Integer t2 = new Integer(1);  
  
    Integer i1;  
  
    public Test() { i1 = t2; }  
    int f() { return i1; }  
  
    public static void main(String[] args) {  
        System.out.println(t1.f());  
    }  
}
```

A) 1

B) 0

C) other

# Puzzle #11 (Final)

```
public class Final {  
    public Final() { trickster(); }  
    void trickster() {}  
  
    public static class Inner extends Final {  
        public int x,y = 123;  
        public final int z = 456;  
  
        public void Inner() { x += 10; }  
        void trickster() { x += y + z; }  
    }  
  
    public static void main(String[] args) {  
        System.out.println(new Inner().x);  
    }  
}
```

A) 589    B) 466    C) 456    d) 123    e) 579

# Puzzle #12 (Equality)

What does this code print?

```
public class FarmYard {  
    public static void main(String[] a) {  
        final String pig = "length: 10";  
        final String dog = "length: " + pig.length();  
        System.out.println("Animals are equal: " +  
                             pig == dog);  
    }  
}
```

A) "length: true"    B) "length: false"    C) other