

# Test Cases for Lab Test on 13 November

## Question 1 (AMICABLE NUMBERS)

- 36

**Output :** 36 **IS** a powerful number.

- 512

**Output :** 512 **IS** a powerful number.

- 4608

**Output :** 4608 **IS** a powerful number.

- 180

**Output :** 180 **is NOT** a powerful number.

- 1536

**Output :** 1536 **is NOT** a powerful number.

- 2560

**Output :** 2560 **is NOT** a powerful number.

## Question 2 (2D Line Segment)

- (a) 1 0 0 1

**Output :**

The line segment is : ((1,0), (0,1))

The line segment **IS NOT** vertical.

Length of the line segment is 1.414...

The line segment **INTERSECTS** the line segment R.

- (b) 0.5 0 0.5 9

**Output :**

The Line segment is : ((0.5,0), (0.5,9))

The Line segment **IS** vertical.

Length of the line segment is 9.0.

The line segment **INTERSECTS** the line segment R.

(c) 2 4 9 4

**Output :**

The Line segment is : ((2,4), (9,4))

The Line segment **IS** vertical.

Length of the line segment is 7.0.

The line segment **Does NOT INTERSECT** the line segment R.

**Question 3 (Tiling a rectangular area)**

case-1 1

**Output : 2**

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case-2 2

**Output : 8**

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case-3 3

**Output : 24**

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case-4 4

**Output : 80**

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case-5 6

**Output : 846**

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## Grading Policy

**Question 1** For question 1, grading is totally based on the test cases : Each test case carries 2 marks.

**Question 2** Each test case has 2 marks, the remaining 6 marks are distributed as follows.

1. 2 marks for constructors (one mark per constructor)
2. 1 mark for non-static method **print**
3. 1 marks for non-static method **isVertical**
4. 1 marks for non-static method **length**
5. 1 mark for non-static method **Intersects**

**Question 3** First four test cases will carry 2 marks each. The last test case will have 4 four marks for 846 as output and 3 marks for 832 as output. The remaining 4 marks are distributed as follows.

1. 1 mark for compiling
2. 1 marks for indentation
3. 1 mark for overall design
4. 1 mark for recursion.