

University of Cape Town ~ Department of Computer Science

Computer Science 1015F ~ 2009

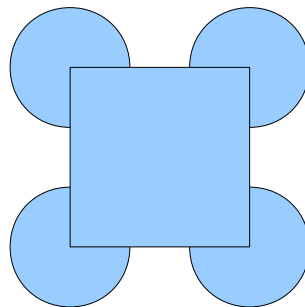
## Practical Test 1A

Time: 45 minutes

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Write a program to calculate the area of the shaded region, using input values for the length of a side of the square and the radius of the circle.

Use the Scanner class for input. Use doubles for all quantities and Math.PI for Pi. Assume that the shapes do not overlap except as indicated in the diagram; the circles are all identical; and the circles are centred on the corners of the square.



*Sample I/O:*

Enter the square length:

5

Enter the circle radius:

2

The area is 62.69911184307752

You may consult your paper notes and textbook, but no electronic resources. You may NOT use a search engine or consult any Web resources (including Vula) or files on your flash disk, hard drive, etc.

Submit the **Test1A.java** source file contained within a .ZIP file to the Automatic Marker. Ensure that you submit your file even if your program does not work as you cannot be awarded part marks if there is no submission!

Marks will be awarded for correctness and comments – the Automatic Marker will only check for correctness but a tutor will mark your submission afterwards.

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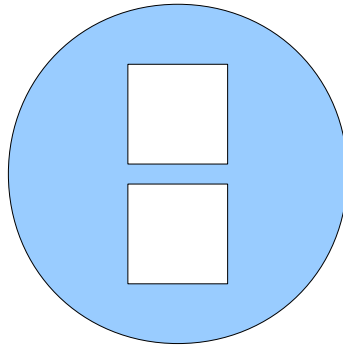
## Practical Test 1B

**Time: 45 minutes**

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Write a program to calculate the area of the shaded region, using input values for the length of a side of the square and the radius of the circle.

Use the Scanner class for input. Use doubles for all quantities and Math.PI for Pi. Assume that the shapes do not overlap except as indicated in the diagram; and the squares are all identical.



*Sample I/O:*

```
Enter the square length:
```

```
2
```

```
Enter the circle radius:
```

```
5
```

```
The area is 70.53981633974483
```

You may consult your paper notes and textbook, but no electronic resources. You may NOT use a search engine or consult any Web resources (including Vula) or files on your flash disk, hard drive, etc.

Submit the **Test1B.java** source file contained within a .ZIP file to the Automatic Marker. Ensure that you submit your file even if your program does not work as you cannot be awarded part marks if there is no submission!

Marks will be awarded for correctness and comments – the Automatic Marker will only check for correctness but a tutor will mark your submission afterwards.

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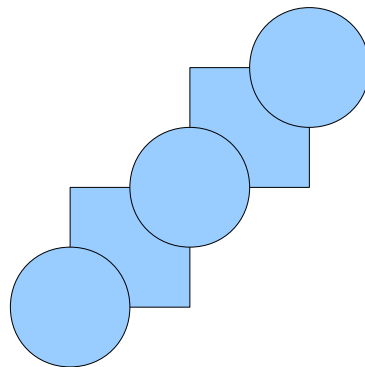
## Practical Test 1C

**Time: 45 minutes**

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Write a program to calculate the area of the shaded region, using input values for the length of a side of the square and the radius of the circle.

Use the Scanner class for input. Use doubles for all quantities and Math.PI for Pi. Assume that the shapes do not overlap except as indicated in the diagram; the circles are all identical; the squares are all identical; and the circles are centred on the corners of the squares.



*Sample I/O:*

```
Enter the square length:
```

```
5
```

```
Enter the circle radius:
```

```
2
```

```
The area is 75.13274122871834
```

You may consult your paper notes and textbook, but no electronic resources. You may NOT use a search engine or consult any Web resources (including Vula) or files on your flash disk, hard drive, etc.

Submit the **Test1C.java** source file contained within a .ZIP file to the Automatic Marker. Ensure that you submit your file even if your program does not work as you cannot be awarded part marks if there is no submission!

Marks will be awarded for correctness and comments – the Automatic Marker will only check for correctness but a tutor will mark your submission afterwards.

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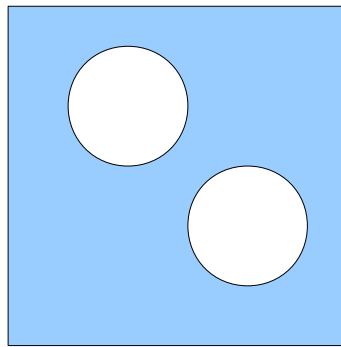
## Practical Test 1D

**Time: 45 minutes**

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Write a program to calculate the area of the shaded region, using input values for the length of a side of the square and the radius of the circle.

Use the Scanner class for input. Use doubles for all quantities and Math.PI for Pi. Assume that the shapes do not overlap except as indicated in the diagram; and the circles are all identical.



*Sample I/O:*

```
Enter the square length:
```

```
5
```

```
Enter the circle radius:
```

```
1
```

```
The area is 18.716814692820414
```

You may consult your paper notes and textbook, but no electronic resources. You may NOT use a search engine or consult any Web resources (including Vula) or files on your flash disk, hard drive, etc.

Submit the **Test1D.java** source file contained within a .ZIP file to the Automatic Marker. Ensure that you submit your file even if your program does not work as you cannot be awarded part marks if there is no submission!

Marks will be awarded for correctness and comments – the Automatic Marker will only check for correctness but a tutor will mark your submission afterwards.

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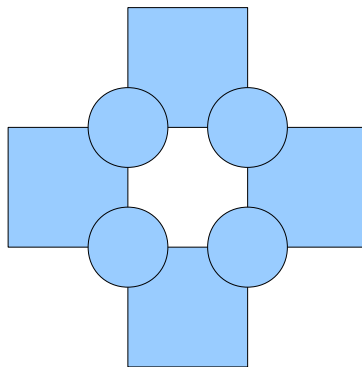
## Practical Test 1E

**Time: 45 minutes**

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Write a program to calculate the area of the shaded region, using input values for the length of a side of the square and the radius of the circle.

Use the Scanner class for input. Use doubles for all quantities and Math.PI for Pi. Assume that the shapes do not overlap except as indicated in the diagram; the circles are all identical; the squares are all identical; and the circles are centred on the corners of the squares.



*Sample I/O:*

```
Enter the square length:
```

```
5
```

```
Enter the circle radius:
```

```
2
```

```
The area is 125.13274122871834
```

You may consult your paper notes and textbook, but no electronic resources. You may NOT use a search engine or consult any Web resources (including Vula) or files on your flash disk, hard drive, etc.

Submit the **Test1E.java** source file contained within a .ZIP file to the Automatic Marker. Ensure that you submit your file even if your program does not work as you cannot be awarded part marks if there is no submission!

Marks will be awarded for correctness and comments – the Automatic Marker will only check for correctness but a tutor will mark your submission afterwards.

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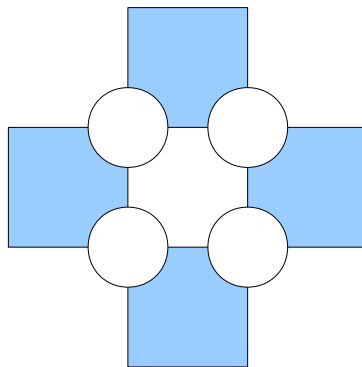
## Practical Test 1F

**Time: 45 minutes**

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Write a program to calculate the area of the shaded region, using input values for the length of a side of the square and the radius of the circle.

Use the Scanner class for input. Use doubles for all quantities and Math.PI for Pi. Assume that the shapes do not overlap except as indicated in the diagram; the circles are all identical; the squares are all identical; and the circles are centred on the corners of the squares.



*Sample I/O:*

```
Enter the square length:
```

```
5
```

```
Enter the circle radius:
```

```
2
```

```
The area is 74.86725877128166
```

You may consult your paper notes and textbook, but no electronic resources. You may NOT use a search engine or consult any Web resources (including Vula) or files on your flash disk, hard drive, etc.

Submit the **Test1F.java** source file contained within a .ZIP file to the Automatic Marker. Ensure that you submit your file even if your program does not work as you cannot be awarded part marks if there is no submission!

Marks will be awarded for correctness and comments – the Automatic Marker will only check for correctness but a tutor will mark your submission afterwards.