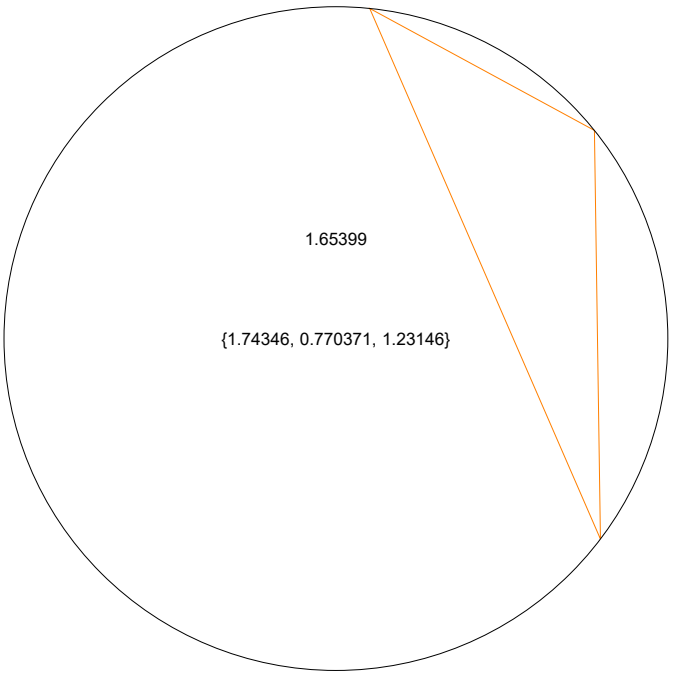
三角形的面积

In[ ]:=
```
With[{pts = RandomPoint[Circle[], 3]},
  abc = EuclideanDistance @@ # & /@ Subsets[pts, {2}];
  Graphics[{{EdgeForm[{Orange}], FaceForm[ ], Triangle[pts]},
    CircleThrough[pts], Text[abc], Text[Times @@ abc, {0, 0.3}]}]]
```
With循环 伪随机点 圆 欧几里得距离 子集 图形 边的格式 橙色 表面样式 三角形 穿过的圆 文本 文本 乘

Out[ ]=



使用海伦公式来计算三角形面积

In[ ]:=
```
FormulaLookup["heron's formula"]
```
查找公式

Out[ ]=
```
{TriangleAreaSSS}
```

In[ ]:=
```
FormulaData["TriangleAreaSSS"]
```
公式数据

Out[ ]=

$$\left\{s == \frac{1}{2}\,(a+b+c),\ A == \sqrt{s\,(-a+s)\,(-b+s)\,(-c+s)}\right\}$$

In[ ]:=
```
FormulaData["TriangleAreaSSS", "Association"]
```
公式数据 关联

Out[ ]=

$$\left\langle\left|\, s \to \frac{1}{2}\,(a+b+c),\ A \to \sqrt{s\,(-a+s)\,(-b+s)\,(-c+s)} \,\right|\right\rangle$$

In[ ]:=
```
FormulaData["TriangleAreaSSS", "QuantityVariableTable"]
```
公式数据

Out[ ]=

symbol	description	physical quantity	dimensions
s	semiperimeter	Length	{LengthUnit, 1}
a	first side length	Length	{LengthUnit, 1}
b	second side length	Length	{LengthUnit, 1}
c	third side length	Length	{LengthUnit, 1}
A	area	Area	{LengthUnit, 2}

In[ ]:=
```
FormulaData["TriangleAreaSSS", {"a" → abc[[1]], "b" → abc[[2]], "c" → abc[[3]]}]
```
公式数据

Out[ ]=
```
s == 1.87264 && A == 0.413497
```

In[ ]:=
```
Solve[s == 1.8726446165754909` && A == 0.4134965173621506` ]
```
解方程

Out[ ]=
```
{{A → 0.413497, s → 1.87264}}
```

In[ ]:=
```
First[{{A → 0.413497, s → 1.87264}}]
```
第一个

Out[ ]=
```
{A → 0.413497, s → 1.87264}
```

In[ ]:=
```
{A → 0.413497, s → 1.87264} /. Rule → List
```
规则 列表

Out[ ]=
```
{{A, 0.413497}, {s, 1.87264}}
```

In[ ]:=
```
{Times @@ abc, 4 * 0.4134965173621506` }
```
乘

Out[ ]=
```
{1.65399, 1.65399}
```