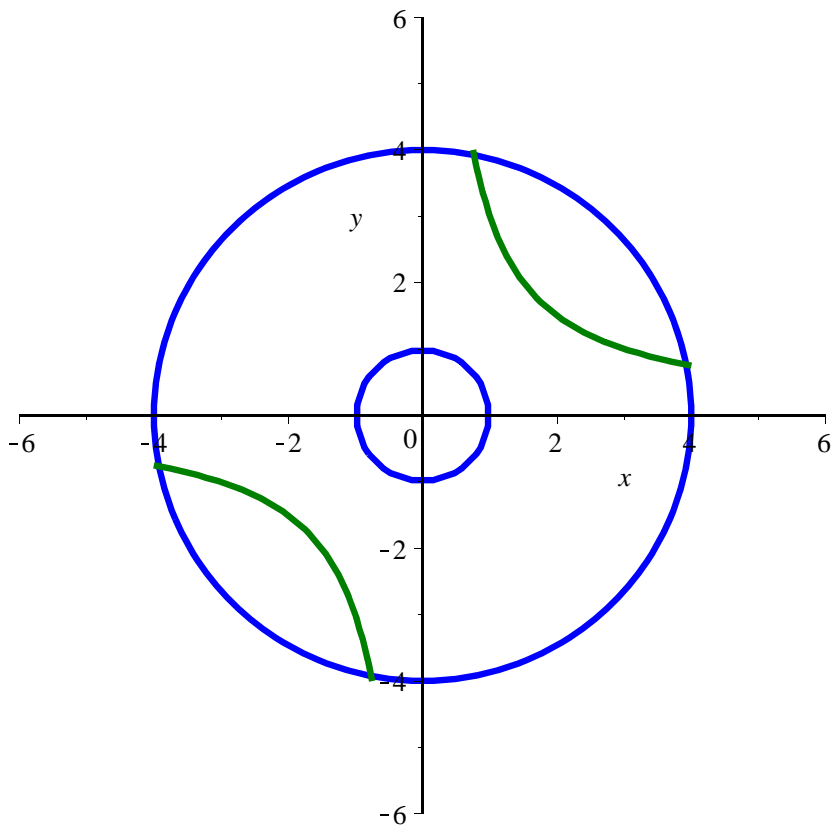


```

> with(plots) :
> f := (x, y) → x2 + y2 :
> g := (x, y) → x·y - 3 :
> P1 := implicitplot( {f(x, y) = 1, f(x, y) = 16}, x=-4..4, y=-4..4, thickness=3, color
    = "Blue" ) :
> P2 := implicitplot(g(x, y) = 0, x=-4..4, y=-4..4, thickness=3, color = "Green" ) :
> display(P1, P2, view = [-6..6, -6..6])

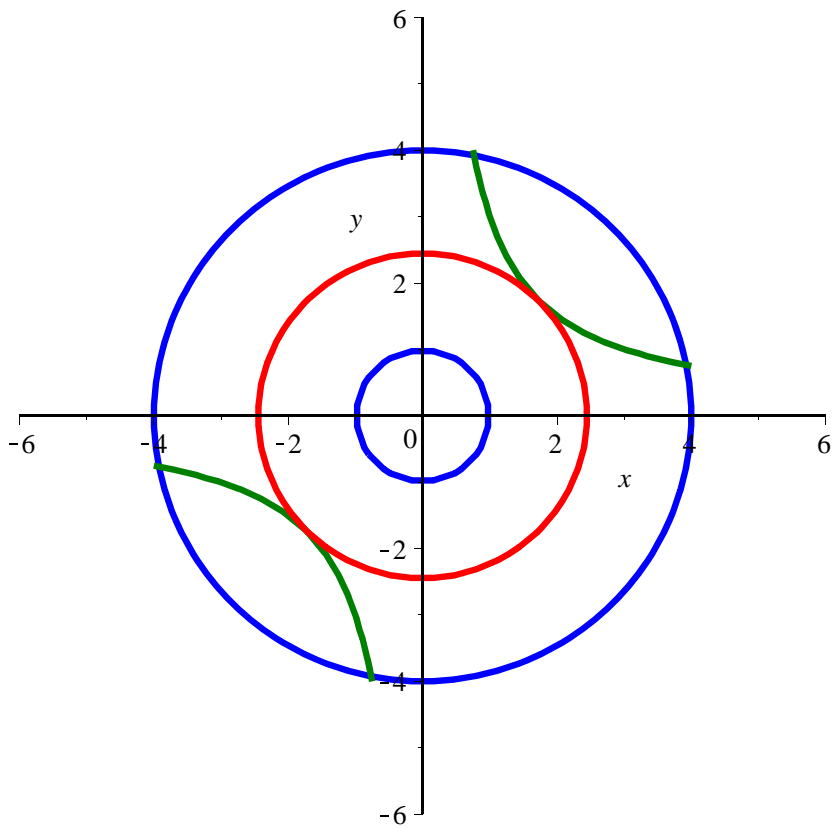
```



```

> P3 := implicitplot(f(x, y) = 6, x=-4..4, y=-4..4, thickness=3, color = "Red" ) :
> display(P1, P2, P3, view = [-6..6, -6..6])

```



```

> with(Student[MultivariateCalculus]) :
> LagrangeMultipliers(f(x, y), [g(x, y)], [x, y])
       $[\sqrt{3}, \sqrt{3}], [-\sqrt{3}, -\sqrt{3}], [-I\sqrt{3}, I\sqrt{3}], [I\sqrt{3}, -I\sqrt{3}]$ 
(1)
> F := (x, y, z) → 2·x2 + y2 + 3·z2 :
> G := (x, y, z) → 2·x + 3·y + 4·z - 49 :
> LagrangeMultipliers(F(x, y, z), [G(x, y, z)], [x, y, z])
       $[3, 9, 4]$ 
(2)
>

```