

```

> s := sqrt(2 + sqrt(3))
s := 1/2 sqrt(6) + 1/2 sqrt(2) (1)
=
> evalf(s)
1.931851653 (2)
=
> t := sqrt(1/2) + sqrt(3/2)
t := 1/2 sqrt(6) + 1/2 sqrt(2) (3)
=
> evalf(t)
1.931851653 (4)
=
> #Matt Anderson 12-15-2014
>
>
> expand(sqrt(a + sqrt(b)))
sqrt(a + sqrt(b)) (5)
=
> c := (a + sqrt(a^2 - b)) / 2
c := 1/2 a + 1/2 sqrt(a^2 - b) (6)
=
>
> d := (a - sqrt(a^2 - b)) / 2
d := 1/2 a - 1/2 sqrt(a^2 - b) (7)
=
> RightSide := sqrt(c) + sqrt(d)
RightSide := 1/2 sqrt(2a + 2sqrt(a^2 - b)) + 1/2 sqrt(2a - 2sqrt(a^2 - b)) (8)
=
> #a check of my derivation
> LeftSide := sqrt(a + sqrt(b))
LeftSide := sqrt(a + sqrt(b)) (9)
=
> #assume c=(a+sqrt(a^2 - b)) divided by 2
> #similarly d=(a-sqrt(a^2 - b)) divided by 2
>

```