In[•]:=
$$\frac{\left(\sqrt{2}+3\right)\left(2\sqrt{2}+1\right)}{\sqrt{2}+1}==7$$

Out[•]=
$$\frac{\left(1+2^{2/3}\sqrt[3]{3}\right)\left(1+3\times 2^{2/3}\sqrt[3]{3}\right)\left(2^{2/3}+3^{2/3}\right)}{\left(\sqrt[3]{2}+\sqrt[3]{3}\right)^2}==13$$

$$\frac{\left(2\sqrt{2}+\sqrt{3}\right)\left(\sqrt{6}+1\right)}{\sqrt{2}+\sqrt{3}}==5$$

$$\frac{\left(\sqrt{2}+3\sqrt{3}\right)\left(\sqrt{6}+1\right)}{2\sqrt{2}+\sqrt{3}}==5$$

$$\frac{\left(\sqrt{2}+3\sqrt{3}\right)\left(\sqrt{6}+1\right)^2}{\sqrt{2}+\sqrt{3}}==25$$

In[•]:=
```
Inactive@Equal@@%%
```

Out[•]=
$$\left(2\sqrt{2}+\sqrt{3}\right)^2==\left(\sqrt{2}+\sqrt{3}\right)\left(\sqrt{2}+3\sqrt{3}\right)$$

$$\left(1+3^{2/3}\right)^2==\left(1+\sqrt[3]{3}\right)\left(1+2\sqrt[3]{3}\right)$$

In[•]:=
```
#==FullSimplify[#/."2":>2]&[
 ((1+6^(1/3)"2")(3^(2/3)+"2"^(4/3)))/(3^(1/3)+"2"^(5/3))^2]
```

Out[•]=
$$\frac{\left(\sqrt[3]{6}\ 2+1\right)\left(2^{4/3}+3^{2/3}\right)}{\left(2^{5/3}+\sqrt[3]{3}\right)^2}==1$$

In[•]:=
$$\frac{\left(1+\sqrt[3]{2}\right)\left(1+3\sqrt[3]{2}\right)}{\left(1+2^{2/3}\right)\left(1+2\times 2^{2/3}\right)}==1$$

$$\frac{\left(2-\sqrt[3]{3}\right)\left(1+\sqrt[3]{3}\right)}{\left(\sqrt[3]{3}-1\right)\left(1+3^{2/3}\right)}==1$$

Out[•]=
$$\frac{\left(1+\sqrt[3]{2}\right)^3\left(1+2^{2/3}\right)\left(\sqrt{3}-2^{2/3}\right)\left(\sqrt{3}+2^{2/3}\right)}{1+3\sqrt[3]{2}}==3$$