In[1]:=
```
CP10CUT = (s^2 + (W/Q) s + W^2) / (s^2 + (G*W/Q) s + W^2)
```

Out[1]=
$$\frac{s^2 + \frac{s\,W}{Q} + W^2}{s^2 + \frac{G\,s\,W}{Q} + W^2}$$

In[2]:=
```
s = P (z - 1)/(z + 1)
```

Out[2]=
$$\frac{P\,(-1+z)}{1+z}$$

In[3]:=
```
CP10CUT
```

Out[3]=
$$\frac{W^2 + \frac{P^2\,(-1+z)^2}{(1+z)^2} + \frac{P\,W\,(-1+z)}{Q\,(1+z)}}{W^2 + \frac{P^2\,(-1+z)^2}{(1+z)^2} + \frac{G\,P\,W\,(-1+z)}{Q\,(1+z)}}$$

In[4]:=
```
Together[ExpandAll[%]]
```

Out[4]=
$$\frac{P^2\,Q - P\,W + Q\,W^2 - 2\,P^2\,Q\,z + 2\,Q\,W^2\,z + P^2\,Q\,z^2 + P\,W\,z^2 + Q\,W^2\,z^2}{P^2\,Q - G\,P\,W + Q\,W^2 - 2\,P^2\,Q\,z + 2\,Q\,W^2\,z + P^2\,Q\,z^2 + G\,P\,W\,z^2 + Q\,W^2\,z^2}$$

In[5]:=
```
Collect[Numerator[%4], z]
```

Out[5]=
$$P^2\,Q - P\,W + Q\,W^2 + (-2\,P^2\,Q + 2\,Q\,W^2)\,z + (P^2\,Q + P\,W + Q\,W^2)\,z^2$$

In[6]:=
```
Collect[Denominator[%4], z]
```

Out[6]=
$$P^2\,Q - G\,P\,W + Q\,W^2 + (-2\,P^2\,Q + 2\,Q\,W^2)\,z + (P^2\,Q + G\,P\,W + Q\,W^2)\,z^2$$

In[7]:=
```
Collect[%5 / (P^2 Q + G P W + Q W^2), z]
```

Out[7]=
$$\frac{P^2\,Q - P\,W + Q\,W^2}{P^2\,Q + G\,P\,W + Q\,W^2} + \frac{(-2\,P^2\,Q + 2\,Q\,W^2)\,z}{P^2\,Q + G\,P\,W + Q\,W^2} + \frac{(P^2\,Q + P\,W + Q\,W^2)\,z^2}{P^2\,Q + G\,P\,W + Q\,W^2}$$

In[8]:=
```
Collect[%6 / (P^2 Q + G P W + Q W^2), z]
```

Out[8]=
$$\frac{P^2\,Q - G\,P\,W + Q\,W^2}{P^2\,Q + G\,P\,W + Q\,W^2} + \frac{(-2\,P^2\,Q + 2\,Q\,W^2)\,z}{P^2\,Q + G\,P\,W + Q\,W^2} + z^2$$