# Solving second order analogue filter

Second order polynomial:

Coefficients:

Substitutions:

Hence,

For filter with gain K=1, equations from Texas Instruments:

where

Solving for ratio of m and n

The above gives us a graph for n to m ratio. Here we are free to pick any convenient ratio for the filter.

Choose

Desired

Substituting in the equations from Texas Instruments to obtain C and R near standard values:

Choose (standard value)

(standard value as well)

Check the actual cutoff frequency

matches expected

Results:

**Appendix:**

Graph for n and m

A screenshot of a graphing graph

AI-generated content may be incorrect.