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/* SAS program to compute power of f-test for AOV */

%let t = 5;          /* Number of treatments */
%let d = 1.0;       /* Minimum difference of means */
%let sigsq = 1.0;   /* A guess of the population */
                   /* variance using prior info */

%let alpha = .05 ; /* Type I error probability of */
                   /* the test */

/* In the following, r is the number of units to assign */
/* to each treatment */
data;
  do r = 4 to 20 by 1;
    n=&t*r;
    df1 = &t-1;
    df2 = n-&t;
    ncp = r*&d*&d/(2*&sigsq); /* The noncentrality */
                               /* parameter */
    fcrit = finv(1-&alpha, df1, df2, 0); /* The critical */
                                         /* f value */
    power = 1 - probf(fcrit, df1, df2, ncp);
    output;
  end;
symbol1 v=none i=join;
proc gplot;
  plot power*r;
run;

```

