Example using SAS mathematical functions to transform variables and create new variables:

The example below shows how to use SAS mathematical functions and arithmetic operators to transform variables and create new variables in a data step. Each new variable is created using an assignment statement, in which the new variable is named on the left hand side of the equals sign, and the function or expression is on the right hand side. These new variables must be created between the data statement and the run statement of a data step to be valid.

data math;
  input x y;
/*mathematical functions*/
  absx = abs(x);
  sqrtx = sqrt(x);
  log10y = log10(y);
  lny = log(y);
  int_y = int(y);
  roundy = round(y,.1);
/*arithmetic operators*/
  mult = x*y;
  divide = x/y;
  expon = x**y;
  tot = x + y;
  diff = x - y;
cards;
  4  5.23
  -15 22.0
  . 18.51
  -1 3
  6 0
  5 5.035
;proc print data=math;
run;

* source: www-personal.umich.edu/~kwelch/.../Operators_Functions.doc
The output from these commands is shown below. Notice the missing values as the result of applying arithmetic or mathematical operators to a missing or illegal argument.
Computing Probabilities.

```sas
/*author: gamez
**date: July 2010
**SAS arithmetics
**Solution for two specific problems
**Let X be a standard normal distribution
**a) Compute P(-3<X<2)
**b) Compute P(X>.5)
*/

data computation;
/*num is a variable that keeps track of the computation number*/
/*description will hold the description of the result*/
**Notice that description is character-valued, also we need to
**increase the length buffer to 15 characters since by default
**it would read only 8, this is achieved by placing "15." after ",".
**For each of the calculations, an explicit formula is written
*/
  input num x y description $15.;
  /*This computes P(-3<X<2)*/
  if num=1 then answer=probnorm(y)-probnorm(x); /*This computes P(X>0.5)=1-P(X<=0.5)*/
  if num=2 then answer=1-probnorm(y);
  /*A null value is placed on the second row for the variable 'x'
  **since is never used*/
cards;
  1 -3 2 'P(-3<X<2)'
  2 .5 'P(X>.5)'
;
run;

/*Print only what we need: the answers and the description of the result*/
/*'noobs' is used to suppress the observation number since is not necessary*/
proc print data=computation noobs;
  var answer description;
  title 'answer to the questions':
run;

answer to the questions                 07:33 Thursday,

   answer    description
          0.97590    'P(-3<X<2)'
          0.30854    'P(X>.5)'
```