1+1	2				
sum(b3:b7)					
	2				
	2				
	2				
	2				
	2				
SUM(B3:B7)	10				
count(b3:b7)	5				
exponent					
2^2	4				
You can calculate the logarithm of a number for a base using the LOG() function, defaulting					
to base 10. Remember that the log is the inverse operation of raising a number to a power.					
For example the expression =LOG(4,2) will calculate the logarithm of 4 using base 2 and					
will evaluate as 2					
log(4,2)	2				
You can calculate the square root of a number using the SQRT() √ function. For example,					
the expression =SQRT(4) evaluates as 2. This is often written as 4.					
sqrt(2)	1.414213562				
Let's try working with the mathematical constant Euler's number (e)					
We can raise a number to e using the function EXP(). For example the expression =EXP(2)					
will evaluate as 7.389056099. This can also be written as e 2					

exp(2)	7.389056099				

We can calculate the natural logarithm of a number using the function LN(). Remember
that the natural logarithm is the inverse operation of raising e to a power. For example
the expression =LN(7.389056099) will evaluate as 2.

ln(7.3890)	2				
pi()	3.141592654				

Statistical Summaries

You can calculate the mean or average of a list of numbers using the AVERAGE() function.
Remember that the average is the middle or central tendency of a list of numbers. For
example, the expression =AVERAGE(1,2,3) will evaluate as 2. Often the mean is referred
to as μ (mu

average(1,2,3)	2				

You can calculate the mode of a list of numbers using the MODE() function. Remember
that the mode of a list of numbers is the most common value in the list. For example the
expression =MODE(2,2,3) will evaluate as 2.

mode(2,3,4,5,5)	5				

You can calculate the standard deviation of a list of numbers using the STDEV() function.
Remember that the standard deviation is the average spread of the points from the mean
value. For example the expression =STDEV(1,2,3) evaluates as 1. Often the standard
deviation is referred to as σ (sigma).

stdev(1,2,3)		1				

You can calculate the correlation between two lists of numbers using the PEARSON()
function. Remember that a correlation of 1 and -1 indicate a perfect positive and neg-
ative correlation respectively. For example the expression =PEARSON({2,3,4},{4,5,6})
evaluates as 1 (perfectly positively correlated).

pearson({2,3,4},{4,5,6})		1				

Random Numbers

You need sample data when implementing machine learning algorithms in a spreadsheet. The
best source of controlled sample data is to use random numbers.

rand()	0.03150608108					
rand()	0.4664283909					

You can calculate a Gaussian random number using the NORMINV() function. Remember
that Gaussian refers to distribution that has a bell shape. Many linear machine learning
algorithms assume a Gaussian distribution. For example, the expression =NORMINV(RAND(),
10, 1) will generate Gaussian random numbers with a mean of 10 and a standard deviation
of 1.

NORMINV(RAND(),10,1)	8.540094961					
NORMINV(RAND(),10,1)	9.473765096					

Flow Control					

You can conditionally evaluate a cell using the IF() function. It takes three arguments, the first is the condition to evaluate, the second is the expression to use if the condition evaluates true, and the final argument is the expression to use if the condition evaluates false. For example the expression =IF(1>2,"YES","NO") evaluates as NO.					
IF(1>2,"yes","no")		no			
IF(10>2,"yes","no")		yes			