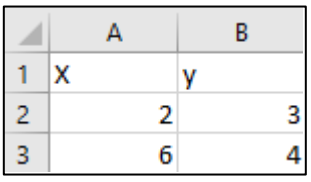
GERMANNA
ACADEMIC CENTER
FOR EXCELLENCE

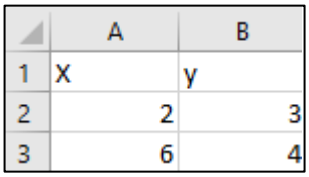
MTH 154/MTH 155: Microsoft Excel Function Index

The following chart is a list of common Excel functions and operations. This chart is not a complete list of all the functions in Excel's Function Library; however, the following functions are ones that are most commonly used within MTH 154 and other calculation-based classes. The inputs of most functions can be numbers or cell references.

Function Syntax	Function Usage	Example
/	Divides the values before the symbol by the value after the symbol.	Find the quotient of 4 and 2. Input: $= 4/2$ Output: 2
*	Multiplies the values before and after the symbol.	Find the product of 4 and 2. Input: $= 4 * 2$ Output: 8
+	Adds the values before and after the symbol.	Find the sum of 4 and 6. Input: $= 4 + 6$ Output: 10
-	Subtracts the values before and after the symbol.	Find the difference of 2 and 6. Input: $= 2 - 6$ Output: -4
^	Raises the value before the caret to the value after the caret.	Find the square of 3. Input: $= 3\text{^}2$ Output: 9
=ABS(number)	Takes the absolute value of the number in the parentheses.	Find the absolute value of -1. Input: = ABS(-1) Output: 1

Function Syntax	Function Usage	Example
=SQRT(number)	Returns the square root of the number in the parentheses.	Find the square root of 16. Input: = SQRT(16) Output: 4
=SUM(first number, second number, etc.) OR =SUM(first cell reference : last cell reference)	Sums the data listed within the parentheses.	Find the sum of 1, 1, and 5. Input: = SUM(1, 1, 5) Output: 7
=AVERAGE(first number, second number, etc.) OR =AVERAGE(first cell reference : last cell reference)	Computes the average (or mean) of the data listed within the parentheses.	Find the average of 4, 2, and 6. Input: = AVERAGE(4, 2, 6) Output: 4
=MAX(first number, second number, etc.) OR =MAX(first cell reference : last cell reference)	Finds the maximum value of the data listed in the parentheses.	Find the max value of 1, 5, and 3. Input: = MAX(1, 5, 3) Output: 5
=MIN(first number, second number, etc.) OR =MIN(first cell reference : last cell reference)	Finds the minimum value of the data listed within the parentheses.	Find the min value of 1, 5, and 3. Input: = MIN(1, 5, 3) Output: 1

Function Syntax	Function Usage	Example
=MEDIAN(first number, second number, etc.) OR =MEDIAN(first cell reference : last cell reference)	Returns the median value of the data inputted in the parentheses.	Find the median of 1, 2, 3, 4, and 5. Input: = Median(1, 2, 3, 4, 5) Output: 3
=COUNT(first number, second number, etc.) OR =COUNT(first cell reference : last cell reference)	Counts the number of data points in the parentheses.	How many values are listed: 1, 3, 4, 5? Input: = COUNT(1, 3, 4, 5) Output: 4
=MODE(first number, second number, etc.) OR =MODE(first cell reference : last cell reference)	Outputs the most frequently occurring number in a group of numbers.	What is the mode of 5, 5, 5, 6, 7, and 10? Input: = MODE(5, 5, 5, 6, 7, 10) Output: 5
=SLOPE(first y cell reference: last y cell reference, first x cell reference: last x cell reference)	Outputs the slope of a linear regression equation given points x and y. Inputs must be in terms of cell references.	Given the points on a line, (2,3) and (6,4), find the slope. Input: First, enter data into a spreadsheet.  Then, input: = SLOPE(B2:B3, A2:A3) Output: 2

Function Syntax	Function Usage	Example
=INTERCEPT(first y cell reference: last y cell reference, first x cell reference: last x cell reference)	Outputs the y-intercept of a linear regression equation given points x and y. Inputs must be in terms of cell references.	Given the points on a line, (2,3) and (6,4), find the intercept. Input: First, enter data into a spreadsheet.  Then, input: = Intercept(B2:B3, A2:A3) Output: 5
=PMT(periodic rate, total number of periods, - principal)	Returns the periodic payment for a given loan. Because a loan represents money owed, the principal is written with a negative sign.	Find the monthly payment for a 2-year loan of 50000 with an APR of 5%. Input: = PMT(5%/12, 2*12, -50000) Output: 2193.57
=RATE(total number of periods, - payment, principle, optional future value)	Returns the periodic rate for a given loan. To find the APR, multiply the function by the total number of periods. Because payments considered an expense, they are written with a negative sign.	Find the monthly interest rate for a 2-year loan of $50,000 with a monthly payment of $2,194. Input: = RATE(24, -2194, 50000)*12 Output: 0.050192 To turn the output into a percentage, multiply by 100.

Function Syntax	Function Usage	Example
=NPER(periodic rate, - payment, principle, optional future value)	Returns the number of periods it will take to pay off a loan or reach an investment goal. Because payments are considered an expense, they are written with a negative sign.	Find the number of monthly payments it will take to pay off a $50,000 loan at 5% if each payment is $2,194. Input: = NPER(5%/12, -2194, 50000) Output: 24
=PV(periodic rate, total number of periods, - payment, optional future value)	Returns the present value needed to reach a future investment goal. Because payments are considered an expense, they are written with a negative sign. Excel also views PV as an expense, so the output will also be negative.	Determine how much money should be placed in a 5% APR savings account to have $50,000 in 10 years with $150 monthly payments Input: = PV(5%/12, 10*12, -150, 50000) Output: -$16,215.85
=FV(periodic rate, total number of periods, - payment, -optional present value)	Returns the future value of an investment. Because payments are taken out of an individual's bank account, they are written with a negative sign. Excel views PV as an expense, so it is also written with a negative sign.	If $587.80 is deposited into a savings account at 3% APR. If $150 is deposited each month, how much will be in the account after 3 years? Input: = FV(3%/12, 3*12, -150, -587.80) Output: $6285.62

Function Syntax	Function Usage	Example
=NOMINAL(APY, total number of periods)	Returns the APR, or nominal rate, given an APY and number of periods.	Suppose that $3000 is invested in a 6-month CD with an APY of 1.2%. What is the corresponding APR? Input: = NOMINAL(1.2%, 2) Output: 0.011964 To turn the output into a percentage, multiply by 100.
=EFFECT(APR, total number of periods)	Returns the APY, or effective rate, given an APR and number of periods.	Suppose that $3000 is invested in a 6-month CD with an APR of 1.196%. What is the annual percentage yield of this investment? Input: =EFFECT(1.196%, 2) Output: 0.01199 To turn the output into a percentage, multiply by 100.
=IF(logical test, value if true, value if false)	Returns one of two values after a logical test is completed.	Create an if statement that will output “true” if 1 is greater than 0 and “false” if 0 is greater than 1. Input: = IF(1 > 0, “true”, “false”) Output: true
=EXP(number)	Calculates the exponential of a number.	Using Excel, calculate $e^{2.1}$. Input: = EXP(2.1) Output: 8.17