Introduction to Excel
For New Math Students

Instructor: Phil E.

Single Operations

$$2 + 2 = 2 + 2$$
└ shift
=

$$2 * 2 = 2 * 2$$
└ shift
8

4

4

Multiple Operations

Simplify $4 + 5 * 6$

second first

34

$4 + 30 = 34$

$= 4 + 5 * 6$

shift =   shift 8

Parenthesis
Exponents
Multiplication
Division
Addition
Subtraction

Operations with Parentheses:

Simplify $6(4+5)$

54

$\uparrow$ times: Put $\times$ between 6 and ( )
Excel won't know it's times unless we say it.

$$= 6 \boxed{*} \, (\, 4 + 5 \,)$$

$\uparrow$ $)$ $\uparrow$

shift   shift $\underline{=}$

shift   shift

9   0

(open)   (close)

Basic Operations with Larger Numbers:

Simplify $4415 + 53 * 61$

7648

$= 4415 + 53 * 61$

shift
=

shift
8

Operations with Exponents:

Simplify $14 + \boxed{3^2} \times 2$

32

$= 14 + \boxed{3 \wedge 2} \times 2$

shift
=

shift
6

shift
8

$3^2 = 3 * 3$

$3^3 = 3 \times 3 \times 3$

$3^4 = 3 \times 3 \times 3 \times 3$

$3 \wedge 2$
└ "carat"
raise
shift 6

Operations with Square Roots:

Simplify $\quad 3 * \sqrt{16} + 2$

14

$= 3 * sqrt(16) + 2$

shift
8

shift
9

shift
0

shift
=

square root
= special formula

sqrt (number)

Operations with Fractions:

Simplify: $\dfrac{4}{5} * \dfrac{15}{2} * \dfrac{10}{3}$

$= 4/5 \quad * \quad 15/2 \quad * \quad 10/3$

↑
shift
8

4/5

next to
Right shift

20

If you misclick,
just click on the cell you
were using, then
click on for mula bar.

Operations with Complex Fractions:

Simplify $\dfrac{10-1}{4-1}$
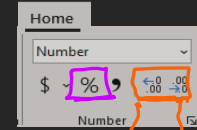
Fractions and percents:

Change 3/8 to a decimal, then to a percent.
Round the answers to two decimal places.

decimal	**0.38**
percent	37.50%

Excel changes
fraction → decimal

To get percent
① Enter = 3/8
② Click on it.
③ Go Home → Number

Home

Number

$ % , ←0 .00
        .00 →0

Number

more
decimal places

fewer

Percentages and Excel:

If a pair of jeans that is usually $50 is on sale, and marked 60% off:
A. Find the discount amount, and paint the answer cell red.
B. Find the sale price and paint the answer cell gold.

List Price	$80	shift-4 for $
Percent Discount	75%	shift-5 for %
Discount Amount	$60 =B7*B8	Take list price times percent discount.
Final Price	$20 =B7-B10	Take list price minus discount amount

Discount Amount = List price * Percent Discount   nt

Final Price = List price − Discount Amount

Comparison Shopping

Imagine you're trying to buy a $400 TV. If store A is offering $50 off, and store B is offering 15% off,
A. Find the discount that store B is offering.
B. Find which store charges less for the TV.

	List Price	Discount Percent	Discount Amount	Final Price
Store B	$400	15%	$60	$340
Store A	$400		$50	$350

Discount = List price × Discount percent

Final Price = List price − Discount

More Percentages and Excel:

If you pay 5% tax and a 15% tip on a meal that costs $25.00, how much are you really paying?
A. Find the Tax amount.
B. Find the Tip amount.
C. Add part A and B to the original cost to get the total.

List Price	$25		
Tax Percentage	5%		
Tax Amount	$1.25	Use list price times tax percentage	=B8*B9
Tip Percentage	15%		
Tip Amount	$3.75	Use list price times tip percentage	=B8*B12
Final total	$30.00	Use tax+tip+list price	=B10+B13+B8

Lists and Averages:

A. Find the average grade for each student.
B. Find the lowest and highest grade for each exam.

columns

=Average (select grades)
shift   shift0
9

	Exam 1	Exam 2	Exam 3	Exam 4	Average
Student A	92	82	52	73	74.75
Student B	77	70	60	99	76.5
Student C	89	83	52	71	73.75
Student D	77	78	94	50	74.75
Student E	91	76	74	59	75
Student F	65	57	98	86	76.5
Student G	82	58	81	69	72.5
Student H	55	94	59	50	64.5
Student I	79	87	54	97	79.25
Student J	74	89	59	99	80.25
Student K	71	65	51	78	66.25
Student L	89	51	89	82	77.75 =AVERAGE(B18:E18)
Student M	70	100	68	89	81.75 =AVERAGE(B19:E19)
Student N	63	65	87	77	73
Lowest:	55	51	51	50	
Highest:	92	100	98	99	

| | 92 | 82 | 52 | 73 =average(B7:E7 |

74.75 To copy a formula:
click on the
formula you
typed, then
mouse over
here
Get black
cross.

Lowest grade
= Min (select data)
Highest grade
= max (select data)

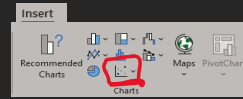IF you make a
mistake with black cross
use [ctrl-Z] or [command-Z]

Scatter Graphs:

This data shows the hours studied vs. Exam 1 score for a MAT 143 class.
Make a scatter chart to illustrate this.

	Hours per week	Exam 1
Student A	10	92
Student B	5	77
Student C	9	89
Student D	6	77
Student E	11	91
Student F	4	65
Student G	7	82
Student H	0	55
Student I	7	79
Student J	3	74
Student K	2	71
Student L	8	89
Student M	2	70
Student N	1	63

Insert

X-Y scatter (hours)
First column = x - horizontal
(exam 1)
second column = y - vertical

Exams Score vs. Hours Studied

(Scatter chart with Exam 1 Score on vertical axis, Hours Studied on horizontal axis)
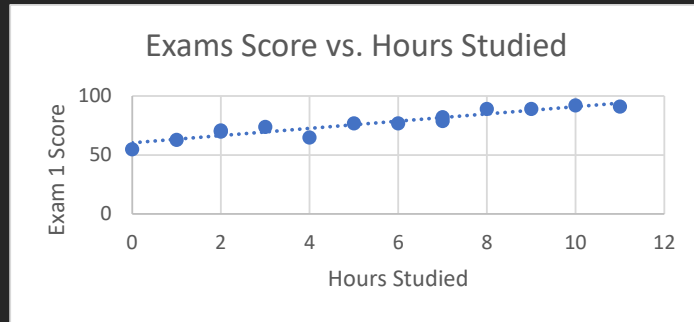
Chart Elements
- ☑ Axes
- ☐ Axis Titles — Labels Horizontal / Vertical
- ☑ Chart Title
- ☐ Data Labels
- ☐ Error Bars
- ☑ Gridlines
- ☐ Legend
- ☐ Trendline — "best" straight line

Expenses and Income

Income				Expenses		
Name	Amount	Times		Name	Amount	Times

Loans and Payments
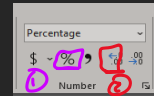
If you're planning to buy a car that costs $25,000, and you're paying for five years with an APR of 5%,
What is the monthly payment?

Monthly interest Rate	0.4167%
Number of months	60
Amount borrowed	$25,000
Monthly Payment	($471.78)

=pmt(C6,C7,C8)

For monthly payments   use   APR / 12   for months in a year

Use   years × 12

= PMT (monthly rate , months, Amount Borrowed)

payment ↗
shift 9

shift O

Investments and Annuities

If you start with $2000 in an investment account for your child's college fund,
And then invest $200 a month every month for 10 years,
How much will you have in the account?

Monthly interest Rate
Number of months
Monthly Deposit
Starting Money

Future Value