

INT():

$$x = 3.94$$

$$y = \text{INT}(x) = 3$$

Use of INT() Function:

- 1, Finding if entered number is a whole number or real number.

<p>INPUT <math>x</math></p> <p><math>y \leftarrow \text{INT}(x)</math></p> <p>IF <math>x = y</math> THEN</p> <p>    OUTPUT "Whole"</p> <p>ELSE</p> <p>    OUTPUT "Real"</p> <p>ENDIF</p>	<table border="0"> <tr> <td><math>\frac{x}{y}</math></td> <td><math>\frac{y}{x}</math></td> </tr> <tr> <td><math>\frac{4.83}{5}</math></td> <td><math>\frac{4}{5}</math></td> </tr> </table>	$\frac{x}{y}$	$\frac{y}{x}$	$\frac{4.83}{5}$	$\frac{4}{5}$
$\frac{x}{y}$	$\frac{y}{x}$				
$\frac{4.83}{5}$	$\frac{4}{5}$				

- 2, Digit Extraction

Means:

$$x = 12489$$

$$y = \text{INT}\left(\frac{x}{1000}\right) = \text{INT}\left(\frac{12489}{1000}\right) = 12.489$$

$$(x = 826354)$$

$$\text{Cell} \leftarrow 3111222925$$

$$\Rightarrow \text{INT}(826354)$$

$$\text{INT}\left(\frac{3111222925}{1000000}\right)$$

$$\rightarrow 82$$

$$= \text{INT}(3111.222925)$$

$$y \leftarrow \text{INT}(x)$$

$$= 3111$$

Consider two (2) things: (Always given)

- 1- Length of number; i.e. how many digits are there in entered number.
- 2- How many digits are required to be extracted and find the divisor accordingly.

Extract 2 digit:  $x = \text{INT}\left(\frac{99999}{10000}\right)$  (5 digits)

Extract 2 digit:  $x = \text{INT}\left(\frac{99999}{1000}\right)$

DIVISIONS:

$\begin{array}{r} 5 \\ 3 \overline{) 16} \\ \underline{15} \\ 1 \end{array}$	<p>DIV()</p> <p>MOD()</p>
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16/3 = 5.3333 Absolute

16 DIV 3 = 5

16 MOD 3 = 1

DIV(16,3)

MOD(16,3)

Example Scenario:

$$\begin{array}{r} 43 \\ 9 \overline{) 392} \\ \underline{387} \\ 5 \end{array}$$

pencils(p) = 392

pencils per box(B) = 9

How many full boxes (F)?

How many leftover (L)?

F = P DIV B      392 DIV 9 = 43

L = P MOD B      392 MOD 9 = 5

Example Question:

- INPUT 150 numbers
- OUTPUT How many numbers are odd and how many numbers are even.

Count ← 0, Num ← 0, x ← 0,  
E ← 0, Odd ← 0.

FOR Count ← 1 TO 150

    INPUT Num

    x ← Num MOD 2

    IF x = 0 THEN E ← E + 1

    IF x = 1 THEN Odd ← Odd + 1

Next

OUTPUT E, Odd

$\begin{array}{r} 3 \\ 2 \overline{) 7} \\ \underline{6} \\ 1 \end{array}$ <p>1 MOD 2 = 1</p> <p>Odd</p>	$\begin{array}{r} 4 \\ 2 \overline{) 8} \\ \underline{8} \\ 0 \end{array}$ <p>8 MOD 2 = 0</p> <p>Even</p>
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LOG10():

$$\text{LOG}(1000) + 1 = 3$$

10 × 10 × 10

$$\text{LOG}(10000) + 1 = 4$$

10 × 10 × 10 × 10

$$\text{LOG}(1250) + 1 = 3.0969$$

$$\text{INT}(\text{LOG}(1250)) + 1 = 3$$

Purpose???

Is to find how many digits are there in the entered number.

INPUT Num

x ← INT(LOG(Num)) + 1

Num	x
10000	5
500	3
3000	4