**Convert Fractions to Decimals**

**The simplest method is to use a calculator.**

|  |  |
| --- | --- |
| Just divide the top of the fraction by the bottom, and read off the answer ! | |
| [http://www.mathsisfun.com/images/calculator.gif](http://www.mathsisfun.com/scientific-calculator.html) | **Example*:* What is 5/8 as a decimal ... ?** |
| ... get your calculator and type in "5 / 8 ="  The answer should be **0.625** |

**To convert a Fraction to a Decimal manually, follow these steps:**

|  |
| --- |
| **Step 1**: Find a number you can multiply by **the bottom of the fraction** to make it 10, or 100, or 1000, or any 1 followed by 0s. |
| **Step 2**: Multiply both top and bottom by that number. |
| **Step 3**. Then write down just the top number, putting the decimal point in the correct spot (one space from the right hand side for every zero in the bottom number) |

**Example 1: Express 3/4 as a Decimal**

Step 1: We can multiply 4 by 25 to become 100

Step 2: Multiply top and bottom by 25:

|  |  |  |
| --- | --- | --- |
| **×25** | | |
| http://www.mathsisfun.com/images/left-up-over-arrow.gif | | |
| **3** | **=** | **75** |
|  |  |
| **4** | **100** |
| http://www.mathsisfun.com/images/left-under-over-arrow.gif | | |
| **×25** | | |

Step 3: Write down 75 with the decimal point 2 spaces from the right (because 100 has 2 zeros);

Answer = 0.75

**Example 2: Express 3/16 as a Decimal**

Step 1: We have to multiply 16 by **625** to become 10,000

Step 2: Multiply top and bottom by 625:

|  |  |  |
| --- | --- | --- |
| **×625** | | |
| http://www.mathsisfun.com/images/left-up-over-arrow.gif | | |
| **3** | **=** | **1,875** |
|  |  |
| **16** | **10,000** |
| http://www.mathsisfun.com/images/left-under-over-arrow.gif | | |
| **×625** | | |

Step 3: Write down 1875 with the decimal point 4 spaces from the right (because 10,000 has 4 zeros);

Answer = 0.1875

**Example 3: Express 1/3 as a Decimal**

Step 1: There is no way to multiply 3 to become 10 or 100 or any "1 followed by 0s", but we can calculate an **approximate** decimal by choosing to multiply by, say, 333

Step 2: Multiply top and bottom by 333:

|  |  |  |
| --- | --- | --- |
| **×333** | | |
| http://www.mathsisfun.com/images/left-up-over-arrow.gif | | |
| **1** | **=** | **333** |
|  |  |
| **3** | **999** |
| http://www.mathsisfun.com/images/left-under-over-arrow.gif | | |
| **×333** | | |

Step 3: Now, **999 is *nearly* 1,000**, so let us write down 333 with the decimal point 3 spaces from the right (because 1,000 has 3 zeros):

Answer = 0.333 (accurate to only 3 decimal places !!)