

# EXAMPLE MODULE FOR USE OF CNXML/MATHML TAGS\*

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A paragraph is the place for text. You can **also** include **vocabulary terms**.

NOTE: Do not use `<emphasis>` for vocabulary terms.

There are two ways to present definitions - using the glossary to define the term as above or using the **definition** tag within the text.

## **Definition 1: problem**

1. a question raised for inquiry, consideration, or solution; a proposition in mathematics or physics stating something to be done
2. an intricate unsettled question; a source of perplexity, distress, or vexation; difficulty in understanding or accepting

**See Also: enigma, puzzle**

## 1 Section Name

A document can have sections, however they are **not** required.

### 1.1 Subsection Name

Sections can have subsections. You can include quotes in paragraphs.

*The seasons alter: hoary-headed frosts Fall in the fresh lap of the crimson rose, And on old Hiems thin and icy crown An odorous chaplet of sweet summer buds Is, as in mockery, set. The spring, the summer, The chiding autumn, angry winter, change Their wonted liveries, and the mazed world, By their increase, now knows not which is which. - **William Shakespeare; A Midsummer Night's Dream**[?]*

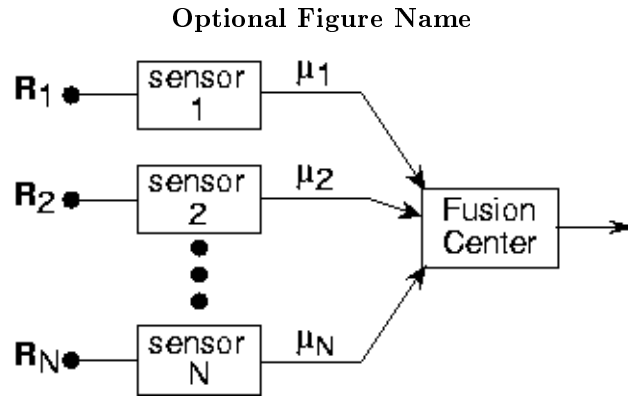
You can also denote words from another language, such as biological genus and species, *E.coli*, or the southern German greeting, *GrüßGott*.

Paragraphs can contain many other tags such as lists and figures. Figure 1 (Optional Figure Name) shows how a figure will display in our system.

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**Figure 1:** The caption of the figure would be here.

There are four different options for list. One type of list is a `named-item` list.

**List name**

- first name** - description of first item
- second name** - description of second item
- third name** - description of third item
- fourth name** - description of fourth item

See the CNXML-0.5 Spec<sup>1</sup> for more information regarding list types.

**Example 1: Optional Name of Example**

Here is where you would put an example that relates to what the previous paragraphs were discussing. In an example, you can include any tags that are allowed in any other paragraph including tables (see Table 1: Temperatures in 5 cities on 11/16/2002).

**Temperatures in 5 cities on 11/16/2002**

City	Degrees Fahrenheit	Degrees Centigrade
Houston	54	12.22
Chicago	37	2.78
Minneapolis	31	-0.56
Miami	78	25.56
Phoenix	70	21.11
<b>Mean</b>	<b>54.000</b>	<b>12.22</b>
<b>Median</b>	<b>54.000</b>	<b>12.22</b>
<b>Variance</b>	<b>330.00</b>	<b>18.166</b>
<b>SD</b>	<b>101.852</b>	<b>10.092</b>

Table 1

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<sup>1</sup><http://cnx.rice.edu/cnxml/0.5/spec/>

In the connexions system, it is important to use `frame="all"` with the `table` tag and `colsep="1"` `rowsep="1"` with the `tbody` tag to properly display the table in the print system.

If you would like a block of material to display exactly as you type it, you can use `<code type='block'>`; as you would when discussing computer programming.

```
>> syms t
>> laplace(exp(t))
ans = 1/(s-1)
>> laplace(t*exp(-t))
ans = 1/(s+1)^2
```

You can also include math in your document. Math can be displayed in three ways in our system: inline, block, or numbered equations. Here are examples of an inline variable,  $x$ , and an inline equation,  $0 < x < \pi$ . Math that you want set apart from the text can be numbered when in an equation tag or simply set apart.

$$\lim_{n \rightarrow \infty} \|x_n - x\| = 0$$

**optional equation name**

$$\begin{aligned} P(f) &= \int_{-\infty}^{\infty} p(t) e^{-i2\pi ft} dt \\ &= \int_0^{\Delta} e^{-i2\pi ft} dt \\ &= \frac{1}{-(i2\pi f)} (e^{-i2\pi f\Delta} - 1) \end{aligned} \tag{1}$$

See our discussion of Content MathML<sup>2</sup> for a more basic discussion of math. See also our MathML Extensions page<sup>3</sup> for more `csymbol` options.

**Theorem 1:** Pythagorean Theorem

For a right triangle with legs  $a$  and  $b$  and hypotenuse  $c$ ,

$$a^2 + b^2 = c^2$$

**Proof:**

The proof would go here.

**Exercise 1**

What is a composite number?

*(Solution on p. 4.)*

<sup>2</sup>"Content MathML" <<http://cnx.org/content/m9008/latest/>>

<sup>3</sup><http://bunker.ece.rice.edu:8080/mntb/wikis/mathml/CSymbol>

## Solutions to Exercises in this Module

### Solution to Exercise (p. 3)

A composite number  $n$  is a positive integer,  $n > 1$ , which is not prime.

## Glossary

### Definition 2: vocabulary term

A word or phrase being defined in the text. A more complete definition with an example could be placed here in the glossary.

## References

- [1] William Shakespeare. A midsummer night's dream. In Alfred Harbage, editor, *William Shakespeare: The Complete Works*, chapter 2.1, pages lines 107–114. The Viking Press, 1969.