MTK Basic Test 03 - Units with Pint

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1 Test Units with Pint

This section tests using the Pint library to implement units in MTK. The following analysis computes the area of a rectangle.

```
from pint import UnitRegistry
units = UnitRegistry()
units.default_format = '~L'

length = 2.5 * units.meter
width = 2.0 * units.meter

area = length * width

force = 20 * units.newton
pressure = force / area

def displayFloat(x, formatString):
  return displayFloatMagnitude(x, formatString) + ' ' + displayUnits(x)

def displayFloatMagnitude(x, formatString):
  value = x.magnitude
  return '$' + formatString.format(float(x.magnitude)) + '$'

def displayUnits(x):
  pintStringElements = '{:}'.format(x).split(' ')
  return '$' + pintStringElements[1] + '$'
```

The area of a rectangle of length 2.50 m and width 2.00 m is 5.00 m^2. For a force of 20.00 N the pressure on the rectangle is 4.00 Pa.