Substitution Rules

Repeated rewrite the leftmost eligible subexpression with one of the following substitution rules until a value or error is obtained:

1. \((f \; v_1 \; \ldots \; v_n) \Rightarrow v\)
   where \(f\) is a built-in function, \(v_1 \; \ldots \; v_n\) are values, and \(v\) is the value of \(f(v_1 \; \ldots \; v_n)\).

2. \((f \; v_1 \; \ldots \; v_n) \Rightarrow \text{exp}'\)
   where \((\text{define} \; (f \; x_1 \; \ldots \; x_n) \; \text{exp})\) occurs to the left, and \(\text{exp}'\) is obtained by substituting into the expression \(\text{exp}\), with all occurrences of the formal parameter \(x_i\) replaced by the value \(v_i\) (for \(i\) from 1 to \(n\)).

3. \(\text{id} \Rightarrow \text{val}\)
   where \((\text{define} \; \text{id} \; \text{val})\) occurs to the left.
Implement a conversion function

Write a function `fahr->celsius` to convert degrees Fahrenheit to degrees Celsius.

\[ C(F) = \frac{5}{9} * (F - 32) \]
Buying supplies

A teacher is buying school supplies for their classroom of $n$ students. Each student needs $b$ binders, $m$ markers, and $p$ pens. What is the cost of the supplies?

The supplies come in packs of a specific size: 3 binders per pack, 8 markers per pack, and 7 pens per pack. Each pack costs $5.$

Define $(\text{supplies-cost } n \ b \ m \ p)$ to calculate the cost of purchasing $b$ binders, $m$ markers, and $p$ pens for each of the $n$ students.
The assignment says marks will be given for correctness and “craft”. Craft is defined as “the result of applying knowledge, skill, and care into creating a product”. What are the signs of “craft” in supplies-cost?

• Choosing meaningful identifier names – even better than the problem slide.
• Helper functions:
  o Easier to understand
  o Easier to debug
• Documented what our code is supposed to do.
• Tested the code.
• Consistent indentation, helped by DrRacket’s indentation feature.