Images created for “What are the proposed realizations in the New SI for the kilogram, ampere, kelvin and mole?” at http://physics.stackexchange.com/q/147433, and “Proposed redefinition of SI base units” at https://en.wikipedia.org/wiki/Proposed_redefinition_of_SI_base_units.

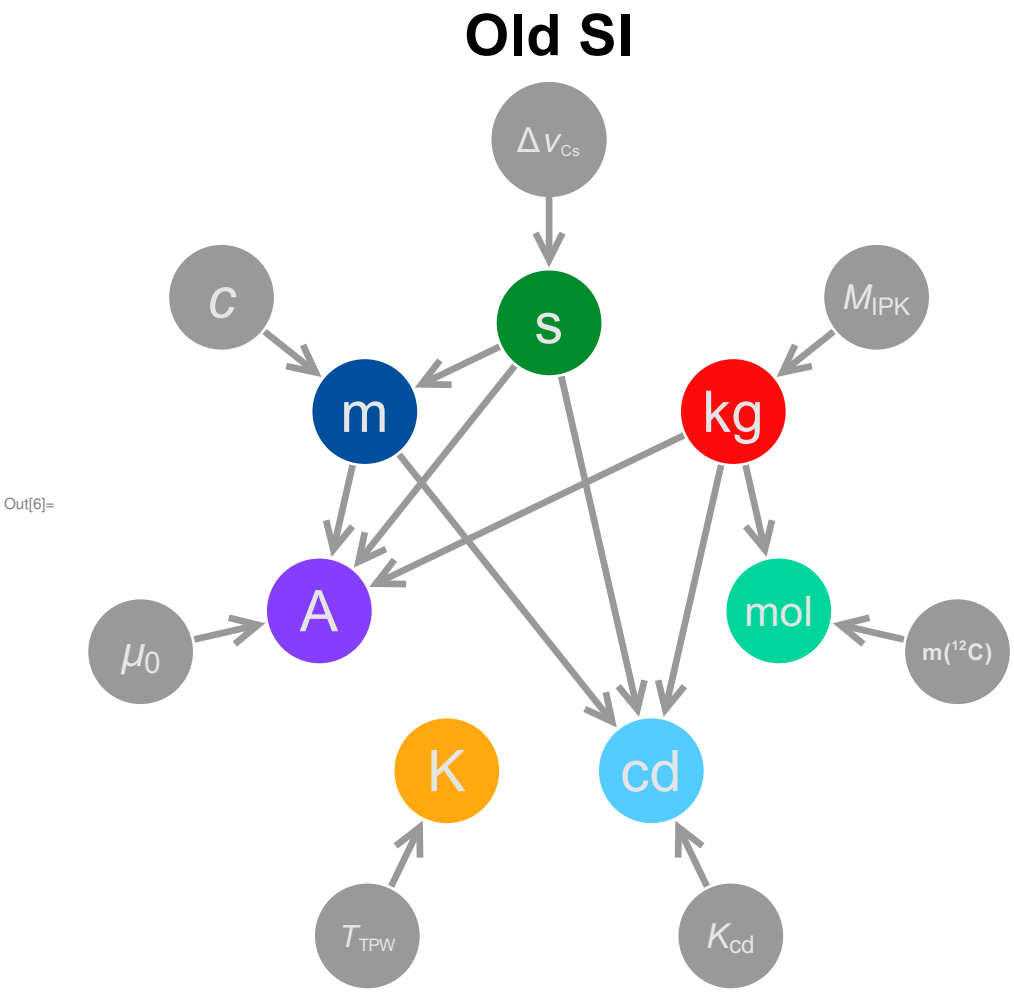
In[1]:=
```
fs = 30;
fs2 = 25;
φ = 2 π / 7;
p[n_] := 4.5 {Sin[n φ], Cos[n φ]}
q[n_] := 8 {Sin[n φ], Cos[n φ]}
oldSI = Show[{
   Graphics[{, Disk[p[0], 1]}],
   Graphics[{Text[Style["s", fs, GrayLevel[0.9]], p[0]]}],
   Graphics[{, Disk[p[1], 1]}],
   Graphics[{Text[Style["kg", fs, GrayLevel[0.9]], p[1]]}],
   Graphics[{, Disk[p[2], 1]}],
   Graphics[{Text[Style["mol", fs - 8, GrayLevel[0.9]], p[2]]}],
   Graphics[{, Disk[p[3], 1]}],
   Graphics[{Text[Style["cd", fs, GrayLevel[0.9]], p[3]]}],
   Graphics[{, Disk[p[4], 1]}],
   Graphics[{Text[Style["K", fs, GrayLevel[0.9]], p[4]]}],
   Graphics[{, Disk[p[5], 1]}],
   Graphics[{Text[Style["A", fs, GrayLevel[0.9]], p[5]]}],
   Graphics[{, Disk[p[6], 1]}],
   Graphics[{Text[Style["m", fs, GrayLevel[0.9]], p[6]]}],

   Graphics[{GrayLevel[0.6], Disk[q[0], 1.1]}],
   Graphics[{Text[Style["Δν_Cs", 18, GrayLevel[0.9]], q[0]]}],
   Graphics[{GrayLevel[0.6], Disk[q[1], 1]}],
   Graphics[{Text[Style["M_IPK", 18, GrayLevel[0.9]], q[1]]}],
   Graphics[{GrayLevel[0.6], Disk[q[2], 1]}],
   Graphics[{Text[Style["m(¹²C)", 12, Bold, GrayLevel[0.9]], q[2]]}],
   Graphics[{GrayLevel[0.6], Disk[q[3], 1]}],
   Graphics[{Text[Style["K_cd", 18, GrayLevel[0.9]], q[3]]}],
   Graphics[{GrayLevel[0.6], Disk[q[4], 1]}],
   Graphics[{Text[Style["T_TPW", 16, GrayLevel[0.9]], q[4]]}],
   Graphics[{GrayLevel[0.6], Disk[q[5], 1]}],
   Graphics[{Text[Style["μ_0", 22, GrayLevel[0.9]], q[5]]}],
   Graphics[{GrayLevel[0.6], Disk[q[6], 1]}],
   Graphics[{Text[Style["c", 30, Italic, GrayLevel[0.9]], q[6]]}],

   Graphics[{
      h = Graphics[{Thickness[0.007], Line[0.5 {{-1, 1/2}, {0, 0}, {-1, -1/2}}]}];
      Thickness[0.007], Arrowheads[{{0.05, 1, h}}], GrayLevel[0.6],
```

```
      Arrow[{p[0], p[6]}, {1.05, 1.2}],
      Arrow[{p[0], p[3]}, {1.05, 1.2}],
      Arrow[{p[0], p[5]}, {1.05, 1.2}],
      Arrow[{p[6], p[3]}, {1.05, 1.2}],
      Arrow[{p[6], p[5]}, {1.05, 1.2}],
      Arrow[{p[1], p[2]}, {1.05, 1.2}],
      Arrow[{p[1], p[3]}, {1.05, 1.2}],
      Arrow[{p[1], p[5]}, {1.05, 1.2}]
     }~Join~(
      Arrow[{q[#], p[#]}, {1.05, 1.2}] & /@ Range[0, 6]
     )],
   Graphics[Text[Style["Old SI", Bold, 30], {0, 10}]]
  }
  , ImageSize → 500
 ]
```

Out[6]=



In[7]:=

```
Export[
  FileNameJoin[{NotebookDirectory[], "Unit relations in the old SI.svg"}], oldSI];
```

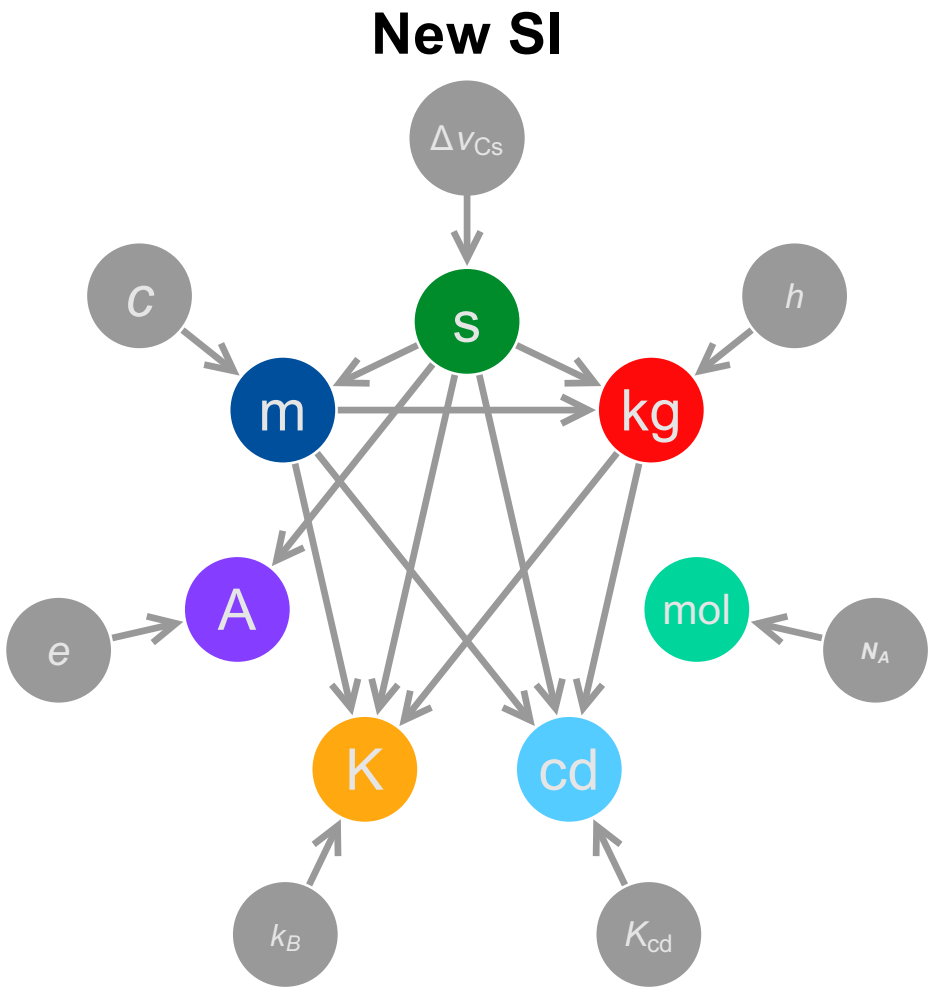
In[8]:=
```
fs = 30;
fs2 = 25;
φ = 2 π / 7;
p[n_] := 4.5 {Sin[n φ], Cos[n φ]}
q[n_] := 8 {Sin[n φ], Cos[n φ]}
newSI = Show[{
   Graphics[{■, Disk[p[0], 1]}],
   Graphics[{Text[Style["s", fs, GrayLevel[0.9]], p[0]]}],
   Graphics[{■, Disk[p[1], 1]}],
   Graphics[{Text[Style["kg", fs, GrayLevel[0.9]], p[1]]}],
   Graphics[{■, Disk[p[2], 1]}],
   Graphics[{Text[Style["mol", fs - 8, GrayLevel[0.9]], p[2]]}],
   Graphics[{■, Disk[p[3], 1]}],
   Graphics[{Text[Style["cd", fs, GrayLevel[0.9]], p[3]]}],
   Graphics[{■, Disk[p[4], 1]}],
   Graphics[{Text[Style["K", fs, GrayLevel[0.9]], p[4]]}],
   Graphics[{■, Disk[p[5], 1]}],
   Graphics[{Text[Style["A", fs, GrayLevel[0.9]], p[5]]}],
   Graphics[{■, Disk[p[6], 1]}],
   Graphics[{Text[Style["m", fs, GrayLevel[0.9]], p[6]]}],

   Graphics[{GrayLevel[0.6], Disk[q[0], 1.1]}],
   Graphics[{Text[Style["Δν_Cs", 18, GrayLevel[0.9]], q[0]]}],
   Graphics[{GrayLevel[0.6], Disk[q[1], 1]}],
   Graphics[{Text[Style["h", Italic, 18, GrayLevel[0.9]], q[1]]}],
   Graphics[{GrayLevel[0.6], Disk[q[2], 1]}],
   Graphics[{Text[Style["N_A", 12, Bold, GrayLevel[0.9]], q[2]]}],
   Graphics[{GrayLevel[0.6], Disk[q[3], 1]}],
   Graphics[{Text[Style["K_cd", 18, GrayLevel[0.9]], q[3]]}],
   Graphics[{GrayLevel[0.6], Disk[q[4], 1]}],
   Graphics[{Text[Style["k_B", 16, GrayLevel[0.9]], q[4]]}],
   Graphics[{GrayLevel[0.6], Disk[q[5], 1]}],
   Graphics[{Text[Style["e", Italic, 22, GrayLevel[0.9]], q[5]]}],
   Graphics[{GrayLevel[0.6], Disk[q[6], 1]}],
   Graphics[{Text[Style["c", Italic, 30, GrayLevel[0.9]], q[6]]}],

   Graphics[{
      h = Graphics[{Thickness[0.007], Line[0.5 {{-1, 1/2}, {0, 0}, {-1, -1/2}}]}];
      Thickness[0.007], Arrowheads[{{0.05, 1, h}}], GrayLevel[0.6],
      Arrow[{p[0], p[1]}, {1.05, 1.2}],
      Arrow[{p[0], p[3]}, {1.05, 1.2}],
      Arrow[{p[0], p[4]}, {1.05, 1.2}],
      Arrow[{p[0], p[5]}, {1.05, 1.2}],
      Arrow[{p[0], p[6]}, {1.05, 1.2}],
      Arrow[{p[1], p[3]}, {1.05, 1.2}],
```

```
      Arrow[{p[1], p[4]}, {1.05, 1.2}],
      Arrow[{p[6], p[1]}, {1.05, 1.2}],
      Arrow[{p[6], p[3]}, {1.05, 1.2}],
      Arrow[{p[6], p[4]}, {1.05, 1.2}]
     }~Join~(
      Arrow[{q[#], p[#]}, {1.05, 1.2}] & /@ Range[0, 6]
     )],
   Graphics[Text[Style["New SI", Bold, 30], {0, 10}]]
  }
  , ImageSize → 500
 ]
```

Out[13]=



In[14]:=

```
Export[
  FileNameJoin[{NotebookDirectory[], "Unit relations in the new SI.svg"}], newSI];
```