

# $\tau$ Clock

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## Abstract

This is a MATweave document that allows you to create a face for a  $\tau$  clock. This is a clock that divides a single day (24 hours normally) into  $\tau$  radians and has a single hand that goes around the clock.

## 1 Introduction

My  $\tau$  clock is based on a clock bought from Seldec Marine <http://www.seldecpublishing.co.uk/clocks/>. I bought the white frame one.

This MATweave document allows you to create a  $\tau$  clock face using MATweave, you can modify the radius to suit your clock or customise as you please.

For more information on what MATweave is and how to run it see <http://staffwww.dcs.shef.ac.uk/people/N.Lawrence/matweave.html>.

```
%}
% Octave code starts here
tau = 2*pi;
numberRadius = 80; % In mm, don't measure the diameter!
circleRadius = 100;
partitions = 12;
partitionLabels = {'0', '\frac{\tau}{12}', ...
                  '\frac{\tau}{6}', '\frac{\tau}{4}', ...
                  '\frac{\tau}{3}', '\frac{5}{12}\tau', ...
                  '\frac{\tau}{2}', '\frac{7}{12}\tau', ...
                  '\frac{2}{3}\tau', '\frac{3}{4}\tau', ...
                  '\frac{5}{6}\tau', '\frac{11}{12}\tau'};

markers = (0:(partitions-1))/partitions + 0.5;

output = ['\draw [-,ultra thick, blue] (180: ' ...
          num2str(circleRadius*0.65) ' ...
          'mm) arc(180:360:' num2str(circleRadius*0.65) 'mm); ' ...
          '\draw(0,0) circle(' num2str(circleRadius) 'mm); \n' ...
          '\draw(0,' num2str(circleRadius/2) ' ...
```

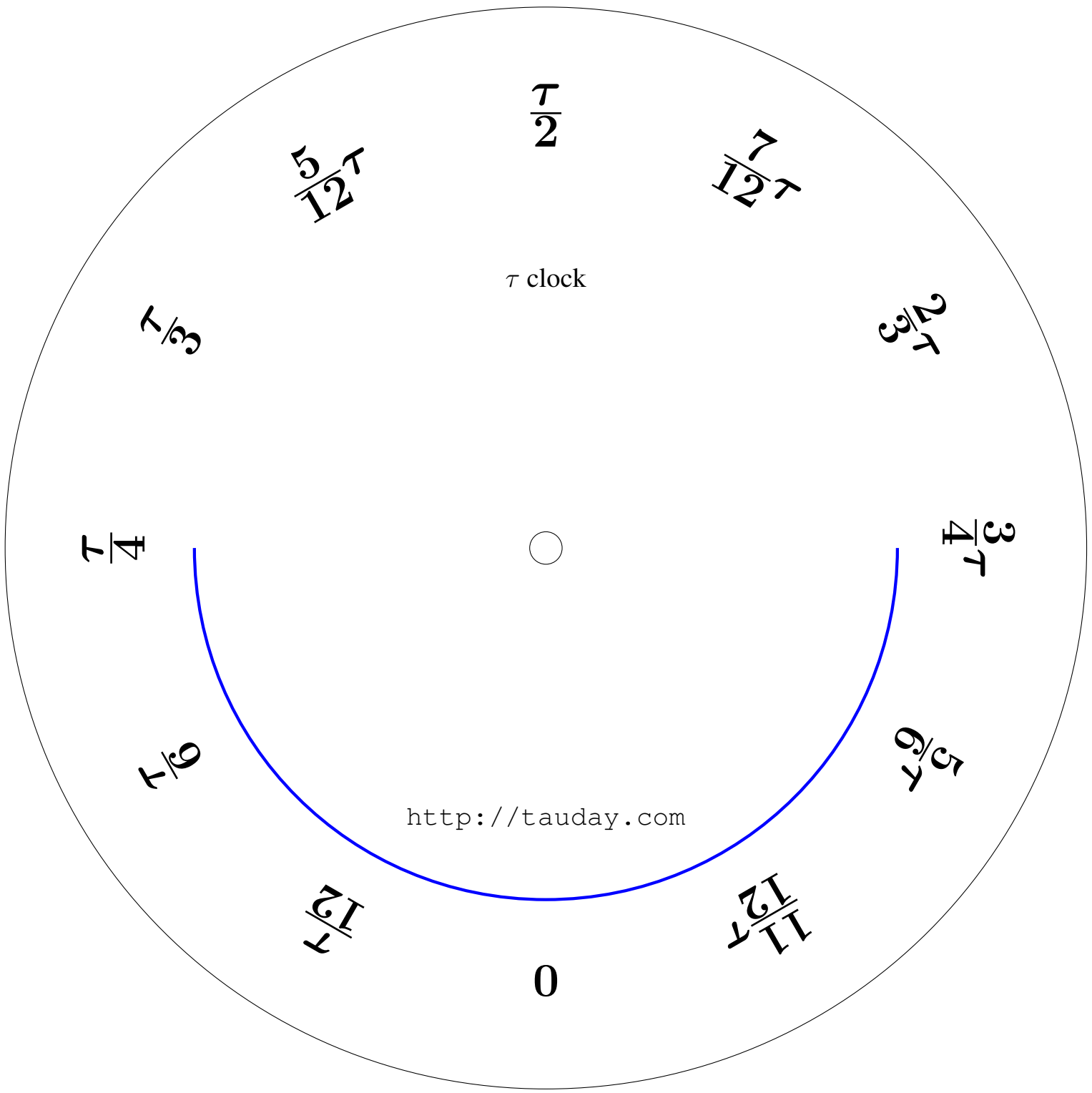
```

        'mm) node {\Large{\tau$ clock}};\n'];
i = 0;
for mark = markers
    i = i + 1;
    x = sin(tau*mark)*(numberRadius);
    y = cos(tau*mark)*(numberRadius);
    output = [output '\draw (' num2str(x, '%2.4f') ...
               'mm, ' num2str(y, '%2.4f') ...
               'mm) node [anchor=center,rotate=' ...
               num2str((1-mark)*360) ...
               '] {\fontsize{40}{48}{\boldsymbol{' ...
               partitionLabels{i} '}$}};\n'];
end
output = [output '\draw(0,-' num2str(circleRadius/2) ...
           'mm) node {\Large{\url{http://tauday.com}}};\n'];
fid = fopen('pictureDetails.tex', 'w');
fprintf(fid, output);
fclose(fid);
% Octave code ends here
%{

```

## Notes

This document was generated using MATweave. Code was run using Octave version 3.2.4 on the architecture x86\_64-pc-linux-gnu. Experiments were run on 14/07/2011.



$\frac{\tau}{2}$

$\frac{7}{12}\tau$

$\tau$  clock

$\frac{2}{3}\tau$

$\frac{1}{3}\tau$

$\frac{5}{12}\tau$

$\frac{3}{4}\tau$

$\frac{1}{4}\tau$

$\frac{5}{6}\tau$

$\frac{1}{6}\tau$

<http://tauday.com>

$\frac{11}{12}\tau$

$\frac{1}{12}\tau$

0