A Sinusoidal Function

$$f = \frac{1}{10}$$

$$\omega = 2\pi f = \frac{2\pi}{10}$$

$$x = \sin(\omega t)$$

```
import mpl_typst.as_default
import numpy as np
from cycler import cycler
from matplotlib import pyplot as plt
from matplotlib import rcParams as rc
from matplotlib.ticker import EngFormatter, FuncFormatter, MultipleLocator

cmap = plt.get_cmap("grey")
num_plot_styles = 4
plot_colors = []
line_styles = []

# Plot style cycler
for i in range(num_plot_styles):
    plot_colors.append(cmap(1.0 * i / num_plot_styles))
    line_styles.append((0, (i + 1, 2 * i)))

style_cycler = cycler(color=plot_colors, linestyle=line_styles)


def get_eng_formatter(self, arg):
    return EngFormatter(unit="$s$" % (arg), sep=r" ")


def get_multiple_locator(self, arg):
    return MultipleLocator(base=arg, offset=0.0)


def get_radian_formatter(self):
    def radian_formatter(x, pos):
        if x == 0:
            return "0"
        elif round(abs(x), 2) == np.pi:
            if x > 0:
                return "$pi$"
            else:
                return "$-pi$"
        else:
            return "$%s pi$" % (round(x / np.pi))

    return FuncFormatter(radian_formatter)


def get_degree_formatter(self):
    def radian_formatter(x, pos):
        return "%s degree" % (round(x))
```

```
    return FuncFormatter(radian_formatter)


rc.update(
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time = np.arange(0, 10, 0.001)
freq = 0.1
omega = 2 * np.pi * freq
sinusoid = np.sin(omega * time)

fig, ax = plt.subplots(1, 1)
ax.plot(time, sinusoid)
fig.savefig("sinusoid-plot.typ")
```

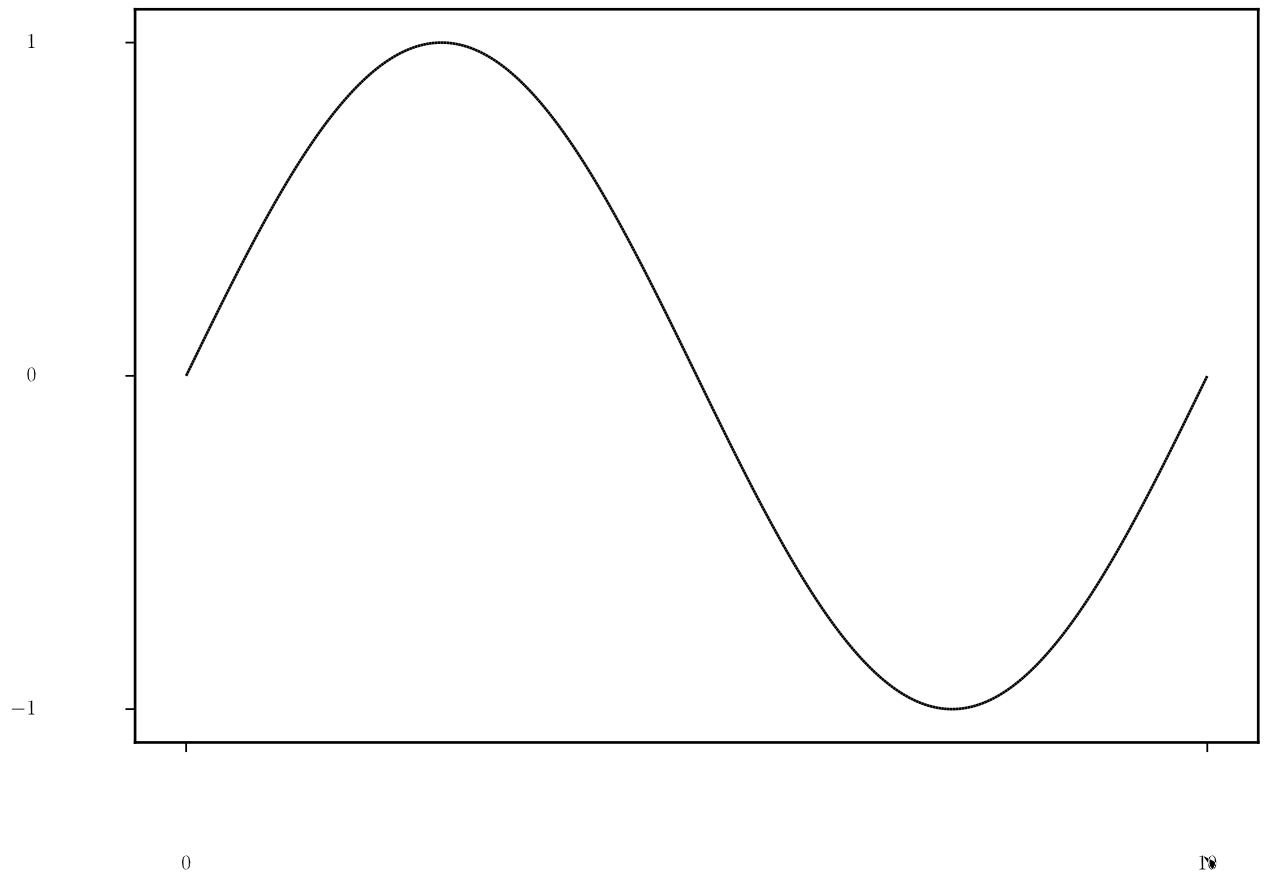

Figure 1: Simple line plot