The mathematician's clock

This clock avoids the use of numeric symbols by expressing the hours [approximately] with equations based on four important numbers commonly used in mathematics:

Circle constant $\quad \pi = 3.14159\ldots$
Euler's number $\quad e = 2.71828\ldots$
Golden section $\quad \Phi = 0.61803\cdots = (\sqrt{5}-1)/2$
Imaginary unit $\quad i = \sqrt{-1}$

$$-e^{i\pi} = 1$$

$$\int_{-\pi}^{+\pi} \frac{\mathrm{d}x}{\pi} = 2$$

$$\cosh\sqrt{\pi} \approx 3 \quad [+0.028\ldots]$$

$$\pi + \frac{e}{\pi} \approx 4 \quad [+0.007\ldots]$$

$$\Phi + \frac{e}{\Phi} \approx 5 \quad [+0.016\ldots]$$

$$\sqrt{\pi^{\pi}} \approx 6 \quad [+0.038\ldots]$$

$$e^{\pi\Phi} \approx 7 \quad [-0.030\ldots]$$

$$\Phi + \int_{-e}^{+e} |x|\,\mathrm{d}x \approx 8 \quad [+0.007\ldots]$$

$$\pi + e + \pi \approx 9 \quad [+0.001\ldots]$$

$$\frac{\pi}{\arcsin(\Phi \ln \sqrt{e})} = 10$$

$$B_{\mathrm{HEX}} = 11 \quad [\text{hexadecimal}]$$

$$\operatorname{arsinh}(\pi^{\pi})^{\pi} \approx 12 \quad [-0.009\ldots]$$