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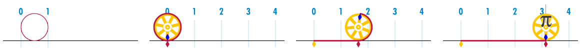

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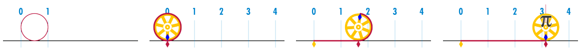

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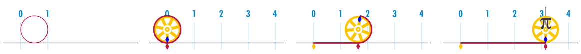

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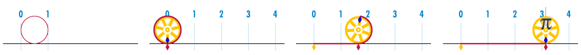

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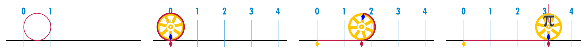

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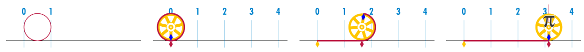

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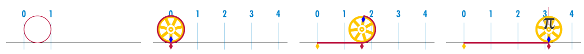

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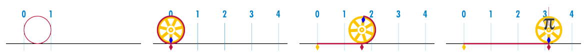

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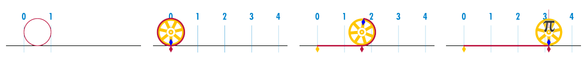

The number π is approximately 3: $\pi = 3.141\ldots$ A good **approximation** is $\pi \approx 22/7$, and an even better one is $\pi \approx 355/113$. These are obtained by truncating the **continued fraction expansion** of π. The symbol is a letter from the Greek alphabet and is pronounced like "pie". Each year on the 14th of March, fans celebrate the international π day. Starting at the 762nd decimal place, **six nines** occur in the digits of π. The **circumference** of a circle with radius r is $2\pi r$. Its **area** is πr^2. The **volume** of a sphere with radius r is $\frac{4}{3}\pi r^3$. The number π is **irrational**, so not equal to any quotient of integers; furthermore, it is **transcendental**, so not a solution of any polynomial equation. **Open question:** Do the ten digits occur equally often in the decimal expansion of π?

$$1-\frac{1}{3}+\frac{1}{5}-\frac{1}{7}+\frac{1}{9}-\ldots=\frac{\pi}{4} \qquad 0=e^{i\pi}+1 \qquad \pi=\int_{-\infty}^{\infty}\frac{dx}{1+x^2}$$

$$\frac{2}{1}\cdot\frac{2}{3}\cdot\frac{4}{3}\cdot\frac{4}{5}\cdot\frac{6}{5}\cdot\frac{6}{7}\cdot\frac{8}{7}\cdot\frac{8}{9}\cdot\ldots=\frac{\pi}{2} \qquad \chi(M)=\frac{1}{2\pi}\int_M K\,dA \qquad f(z)=\frac{1}{2\pi i}\oint\frac{f(\zeta)}{\zeta-z}\,d\zeta$$

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