1. Adrien Marie Legendre, and the Geometry book was Elements de geometric

2. Victor poncelet, Traite des proprietes projectives des figures, contained new form of geometry like cross ratio

3. Small town mayor near paris

4. Balzano

5. Let $I = \int_{-\infty}^{\infty} e^{-x^2/2}\,dx$

then $I^2 = \left(\int_{-\infty}^{\infty} e^{-x^2/2}\,dx\right)\left(\int_{-\infty}^{\infty} e^{-y^2/2}\,dy\right)$

$= \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} e^{-\frac{x^2-y^2}{2}}\,dx\,dy$

Convert to polar $-x^2-y^2 = -(x^2+y^2) = -r^2$

$I^2 = \int_0^{\infty}\int_0^{2\pi} e^{-r^2/2}\, r\,d\theta\,dr$

$= 2\pi\int_0^{\infty} e^{-r^2/2}\, r\,dr$ let $u = -r^2/2$ $du = -r$

$I^2 = 2\pi \rightarrow I = \sqrt{2\pi}$