On the
Circumference of an Ellipse

John R. Hendricks

"They teach us the area and circumference of a circle, and the area of an ellipse, but we get nothing on the circumference of an ellipse."

An **approximation** to the circumference of an ellipse was shown in the newsletter of the Statistical Association of Manitoba, Vol. 14, No. 5, January 1991. The approximation is closer than the error induced by using 22/7 for the value of π. The equation is:

$$S \approx 2(\pi - (\pi - 2).e^3).a$$

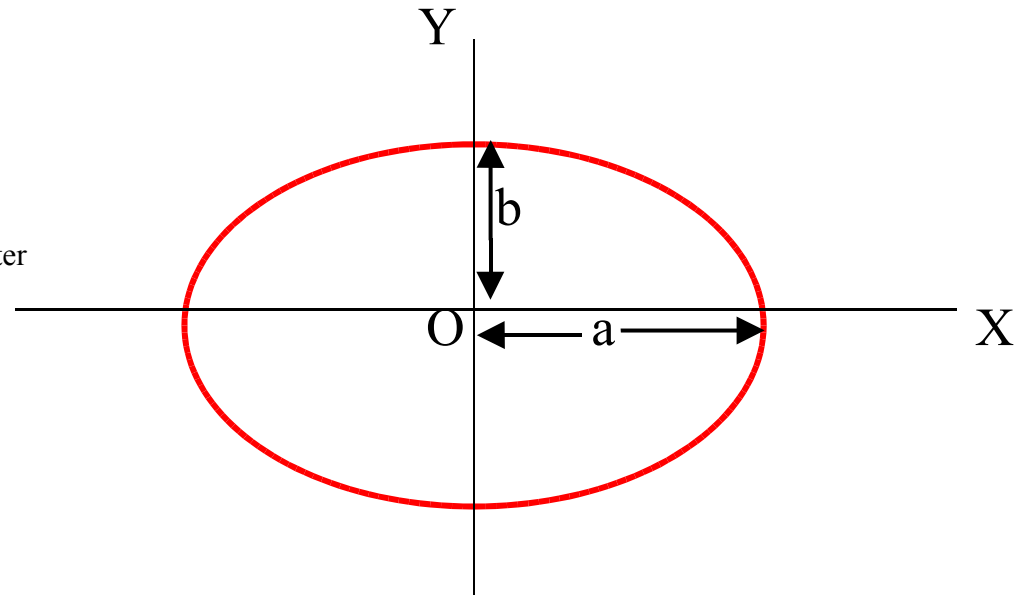
where:

$\pi \approx$ 3.14159265358979323846264338327 95

e is the eccentricity, and $0 \leq e < 1$

a is the length of the semi-major axis.

1. poster



$X^2/a^2 + Y^2/b^2 = 1$ and $c^2 = a^2 - b^2$ and $e = c/a$

and the area remains: $A = \pi ab$

Statistical correlation to elliptic integral tables gives **coefficient** r = .9982.

[1]