



Conor says

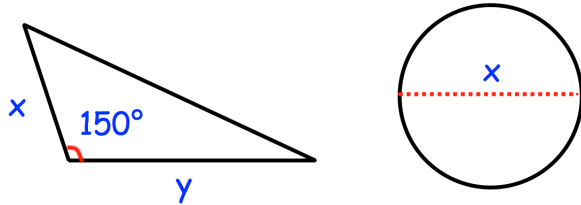
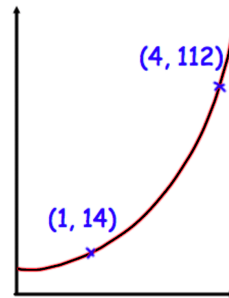
$$\cos(45^\circ) = \frac{1}{\sqrt{2}}$$

Is he correct?

The sketch shows a curve with equation $y = ab^x$ where a and b are constants and $b > 0$

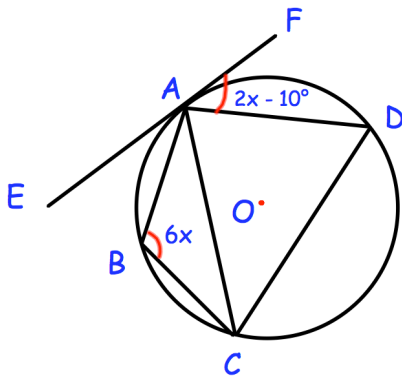
The curve passes through the points $(1, 14)$ and $(4, 112)$

Calculate the value of a and b



The triangle and circle have the same area.

Express y in terms of x .



EF is a tangent to a circle, centre O .

$$\angle DAF = 2x - 10^\circ$$

$$\angle ABC = 6x$$

$$AC = CD$$

Find the size of angle $\angle DAF$