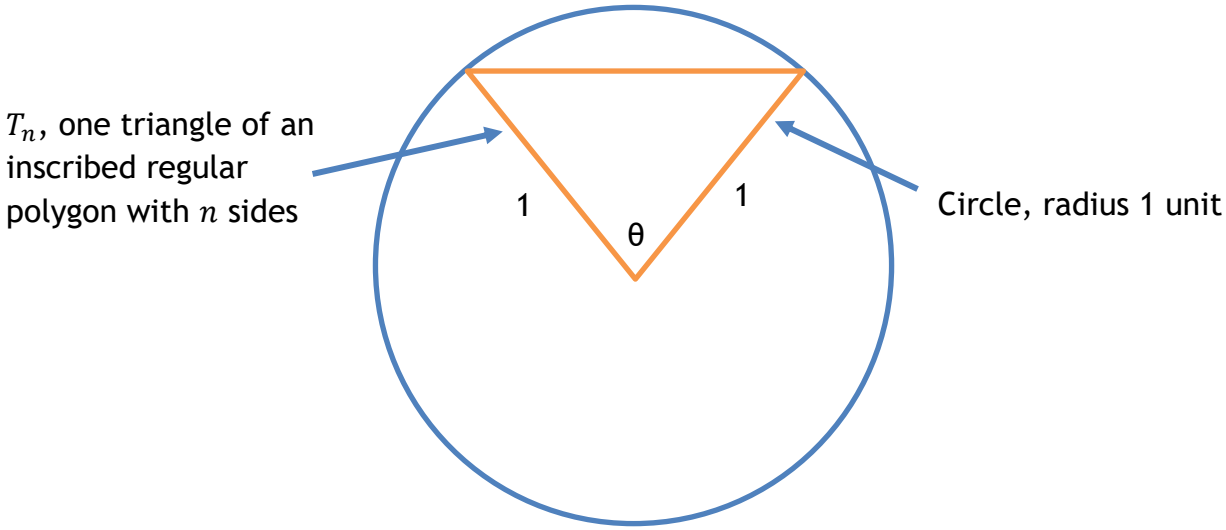

1. Calculate the exact area of the circle
2. Write down the size of the angle θ in degrees or radians
3. Calculate the area of the triangle T_n
4. Calculate the area of the regular polygon
5. Evaluate the polygon area for n=10, 100, 1000,…
6. Comment on your findings

Teacher notes

1. $\pi \times 1^2 = \pi$

2. $\frac{360^\circ}{n}$

3. $T_n = \frac{1}{2}(1)^2\sin(\frac{360}{n}) = \frac{1}{2}\sin(\frac{360}{n})$

4. $\frac{n}{2}\sin(\frac{360}{n})$

n	Polygon area
10	2.938926261462365645843529773195363842988262188215729955361...
10^2	3.139525976465668803808911228281556656124241595333313638152...
10^3	3.141571982779475624867655078979889199905642381339575427988...
10^4	3.141592446881286116726267664260446369514717571166181933345...
10^5	3.141592651522708126850681617923104220866303707727688147453...
10^6	3.141592653569122387342484305787156673326606958238631179502...
10^{10}	3.141592653589793238255934872077504083031407561391566939003...
10^{100}	**3.141592653589793238462643383279502884197169399375105820974...**
π	**3.141592653589793238462643383279502884197169399375105820974...**