Construct a regular pentadecagon inscribed in a circle.

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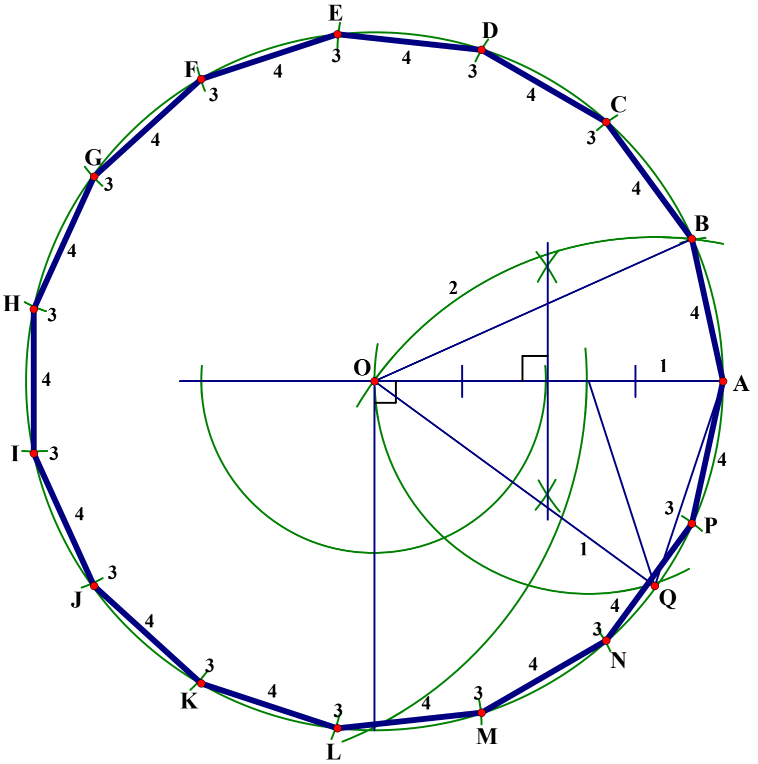
Given a circle with centre at *O*. To contruct a inscribed regular pentadecagon (regular 15-sided polygon).
Calculations: Let the pentadecagon be *ABCDEFGHIJKLMNP*.
$\angle AOB = 360°\div 15 = 24°$ ($\angle$s at a point)
From the section of a golden triangle (a 36°-72°-72° triangle), we know how to construct 36°.
Using $60° - 36° = 24°$. The work is done.



Construction steps:
(1) Contruct a golden triangle *OAQ* (a 36°-72°-72° triangle)
(2) Construct an equilateral triangle *OQB* as shown. $\angle AOB = 60° - 36° = 24°$
(3) Construct an arc $\odot(B, BA)$, cutting the circle again at *C* as shown.
Construct an arc $\odot(C, CB)$, cutting the circle again at *D* as shown.
Construct an arc $\odot(D, DC)$, cutting the circle again at *E* as shown.
Construct an arc $\odot(E, ED)$, cutting the circle again at *F* as shown.
Construct an arc $\odot(F, FE)$, cutting the circle again at *G* as shown.
Construct an arc $\odot(G, GE)$, cutting the circle again at *H* as shown.
Construct an arc $\odot(H, HG)$, cutting the circle again at *I* as shown.
Construct an arc $\odot(I, IH)$, cutting the circle again at *J* as shown.
Construct an arc $\odot(J, JI)$, cutting the circle again at *K* as shown.
Construct an arc $\odot(K, KJ)$, cutting the circle again at *L* as shown.
Construct an arc $\odot(L, LK)$, cutting the circle again at *M* as shown.
Construct an arc $\odot(M, ML)$, cutting the circle again at *N* as shown.
Construct an arc $\odot(N, NM)$, cutting the circle again at *P* as shown.
(5) Join *AB*, *BC*, *CD*, *DE*, *EF*, *FG*, *GH*, *HI*, *IJ*, *JK*, *KL*, *LM*, *MN*, *NP* and *PA*.
Then *ABCDEFGHIJKLMNP* is the required regular pentadecagon. Proof omitted.
Using angle bisectors, we can construct a regular 30-sided polygon, 60-sided polygon, $\cdots$, 15×2^n sided polygon ($n \geq 0$).