

• semiregular tiling

n total # of degrees = $(n-2)\pi$

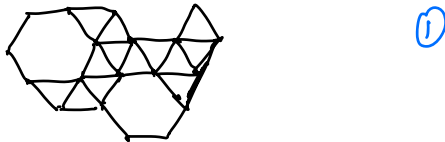
$$2 = \frac{(n-2)\pi}{n}$$



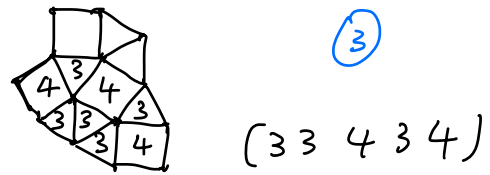
$$n=7. \frac{(7-2) \cdot 180}{7} = \frac{900}{7} = 128.57 \dots$$

• 5 tiles at a vertex.

• 4 Δ $360 - 4 \times 60 = 360 - 240 = 120$.



• 3 Δ $360 - 3 \times 60 = 360 - 180 = 180$

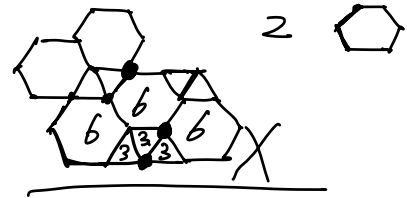
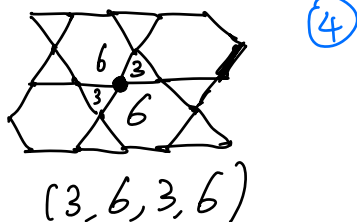


• 2 Δ $360 - 2 \times 60 = 360 - 120 = 240$. X

• 4 tiles at a vertex.

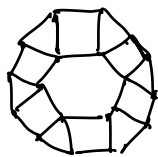
• 3 Δ $360 - 3 \times 60 = 180$ X

• 2 Δ $360 - 2 \times 60 = 360 - 120 = 240 = 120 + 120$.




$(3, 3, 6, 6)$

• 1 \triangle $360 - 60 = \textcircled{300} = 90 + 90 + 120$



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• 0 \triangle 

• 3 tiles at a vertex.

n -gon, m -gon, l -gon.

$$1 - \frac{2}{n} = \frac{n-2}{n} \pi + \frac{m-2}{m} \pi + \frac{l-2}{l} \pi = 2\pi$$

$$\Leftrightarrow \boxed{\frac{1}{n} + \frac{1}{m} + \frac{1}{l} = \frac{3-2}{2} = \frac{1}{2}}$$

\leadsto only possible configuration tiles :

$$\boxed{\begin{array}{l} (3, 12, 12), (4, 6, 12) \\ (4, 8, 8), \boxed{(6, 6, 6)} \end{array}}$$

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Projective Geometry

