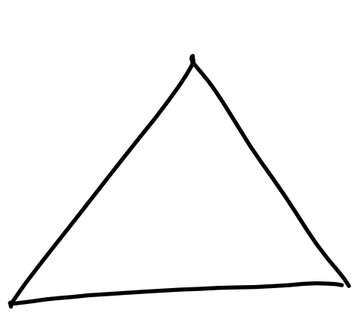
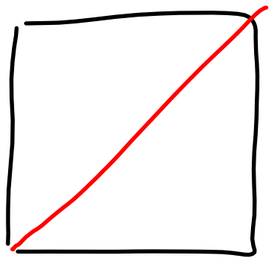
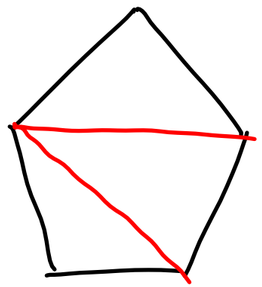
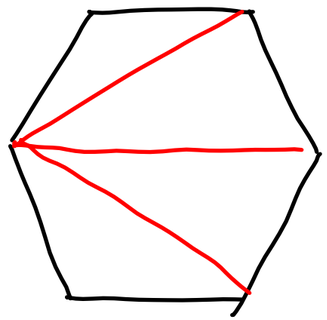
Polygon Angle-Sum Theorem









# of sides	3	4	5	6
# of Δ's	1	2	3	4
Degrees	180°	360°	540°	720°

- Polygon Angle-Sum Theorem ⇒ Total Degrees = $(n-2)\cdot 180$, n = # of sides

EX → Decagon ⇒ n = 10

Degrees = $(10-2)\cdot 180$

$= 8\cdot 180 = \underline{1440^\circ}$

EX → Dodecagon ⇒ n = 12

Degrees = $(12-2)\cdot 180$

$= 10\cdot 180 = \underline{1800^\circ}$

EX → n = 35

Degrees = $(35-2)\cdot 180$

$= 33\cdot 180 = \underline{5940^\circ}$

- "Regular" → all sides AND all angles are equal
- To find ONE angle in a regular polygon, divide degrees by # of sides

EX1 → Pentagon

$\angle = \frac{540}{5} = \underline{108^\circ}$

EX2 → Octagon

Degrees = $(8-2)\cdot 180$

$= 6\cdot 180 = 1080^\circ$

$\angle = \frac{1080}{8} = \underline{135^\circ}$

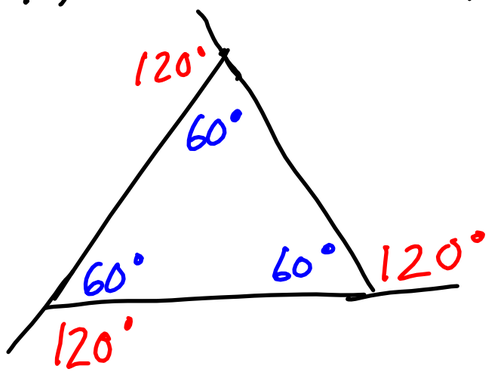
EX3 → n = 50

Degrees = $(50-2)\cdot 180$

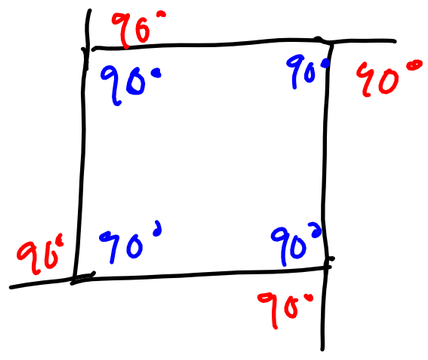
$= 48\cdot 180 = 8640^\circ$

$\angle = \frac{8640}{50} = \underline{172.8^\circ}$

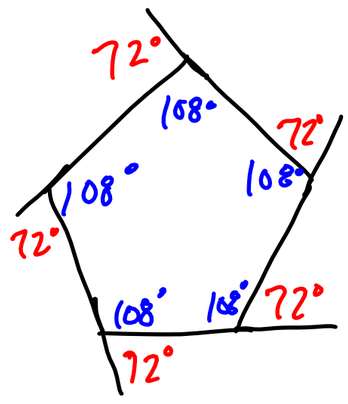
- Polygon Exterior Angle-Sum Theorem



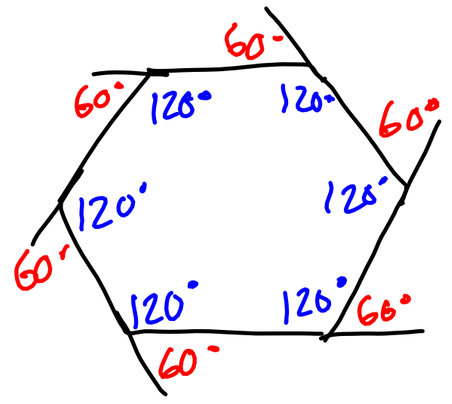
360°



360°



360°



360°

=> Exterior angles of a polygon = 360°

HW: p. 356 → 8-36 even (omit 28), 41, 46