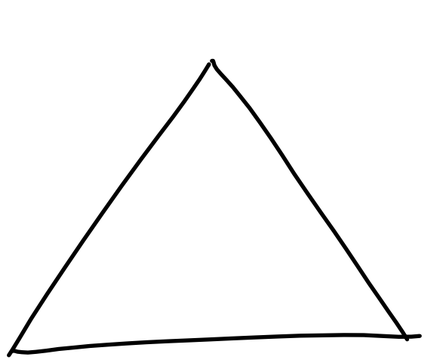
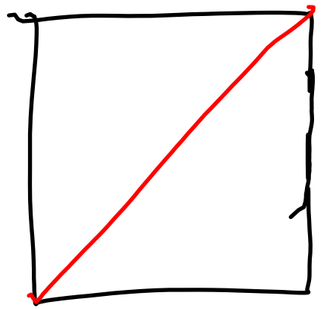
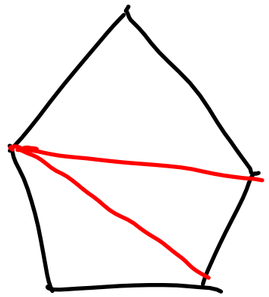
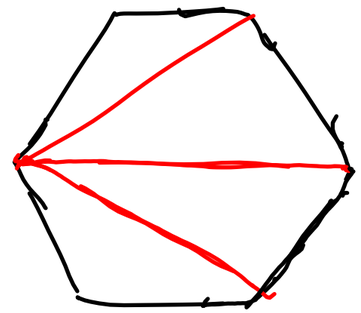
Polygon Angle-Sum Theorem









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

- Polygon Angle-Sum Theorem ⇒ 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 ⇒ $n=27$

Degrees $= (27-2)\cdot 180$

$= 25\cdot 180 = \underline{4500^\circ}$

→ "regular" → all sides AND all angles are equal

→ To find angle measure of one angle in a regular polygon, divide degrees by # of sides

EX → Pentagon

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

EX → Octagon

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

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

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

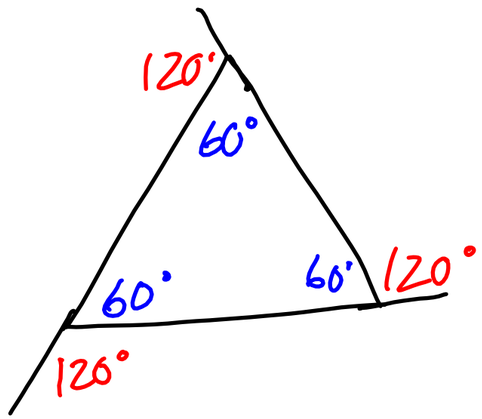
EX → 50-gon

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

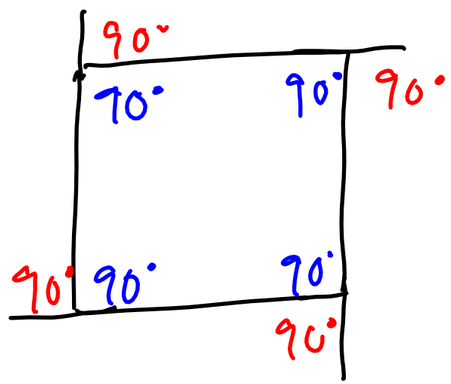
$= 48\cdot 180 = 8640^\circ$

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

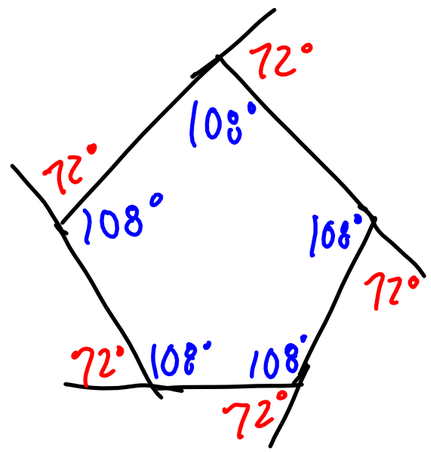
- Polygon Exterior Angle-Sum Theorem



360°



360°



360°

→ Sum of exterior angles in a polygon = 360°

HW: p. 356 → 8-36 even (omit 28)