8-3

Diagonals and Angles of Polygons

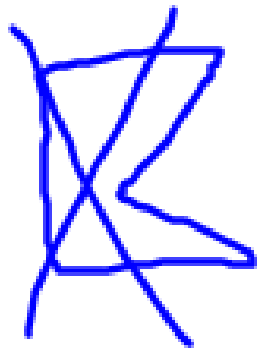
sum of the angles

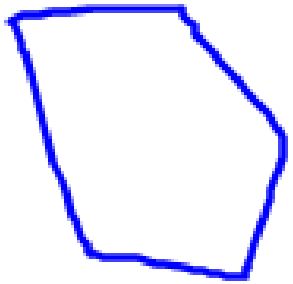
$180(n-2)$

n: # of sides

EX: sum octagon(8)

$180(6) = \boxed{1080^\circ}$





EX: sum pentagon (5)

$180(3) = \boxed{540^\circ}$

pent 5
hex 6
hept 7
oct 8
non 9

dec 10

20-gon

one interior angle

$$\frac{180(n-2)}{n}$$

EX: one regular hexagon (6)

$$\frac{180(4)}{6} = 120^\circ$$

Ex: <u>one</u> regular 14-gon

$$\frac{180(12)}{14} = 154.3^\circ$$

Ex: Find the unknown angle.

$180(2) = 360$

$$\begin{array}{r} 141 \\ 72 \\ +\ 70 \\ \hline 283 \end{array}$$

$$\begin{array}{r} 360 \\ -\ 283 \\ \hline \end{array}$$

$77°$

EX:

431 =

$180(3) = 540$

$$\begin{array}{r} 540 \\ -\ 431 \\ \hline 109^\circ \end{array}$$