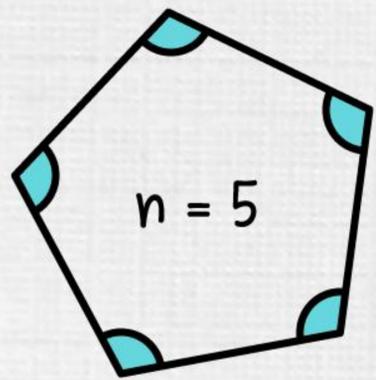


BAB 4: POLIGON

MATEMATIK TINGKATAN 2

POLIGON



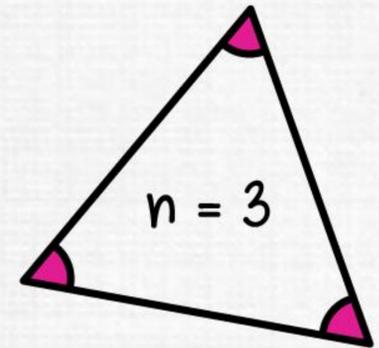
Hasil Tambah Sudut Pedalaman
 $= (n - 2) \times 180^\circ$
 $= (5 - 2) \times 180^\circ$
 $= 3 \times 180^\circ$
 $= 540^\circ$

pentagon

Hasil Tambah Sudut Pedalaman

$$(n - 2) \times 180^\circ$$

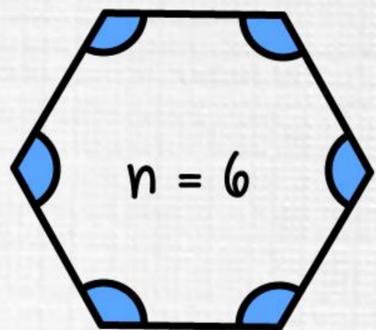
n = bilangan sisi
/bilangan sudut



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$
$$= (3 - 2) \times 180^\circ$$
$$= 1 \times 180^\circ$$
$$= 180^\circ$$

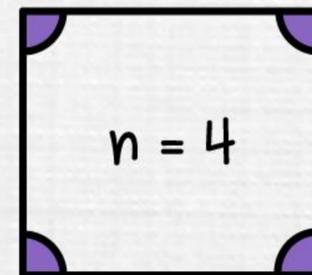
segi tiga



Hasil Tambah Sudut Pedalaman
 $= (n - 2) \times 180^\circ$
 $= (6 - 2) \times 180^\circ$
 $= 4 \times 180^\circ$
 $= 720^\circ$

heksagon

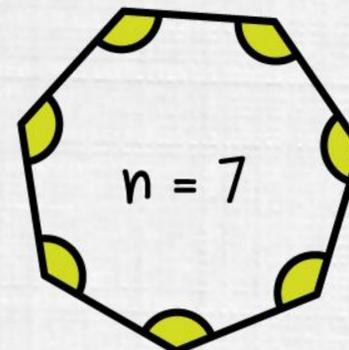
segi empat



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$
$$= (4 - 2) \times 180^\circ$$
$$= 2 \times 180^\circ$$
$$= 360^\circ$$

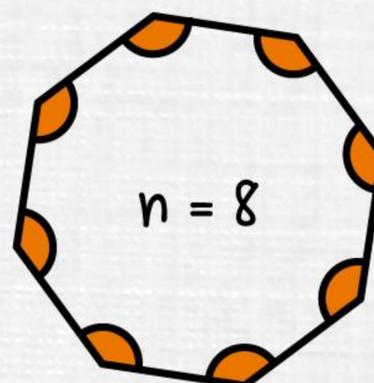
heptagon



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$
$$= (7 - 2) \times 180^\circ$$
$$= 5 \times 180^\circ$$
$$= 900^\circ$$

oktagon



Hasil Tambah Sudut Pedalaman

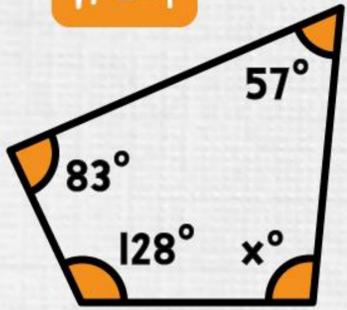
$$= (n - 2) \times 180^\circ$$
$$= (8 - 2) \times 180^\circ$$
$$= 6 \times 180^\circ$$
$$= 1080^\circ$$



POLIGON

Kira nilai x°

$n = 4$



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$

$$= (4 - 2) \times 180^\circ$$

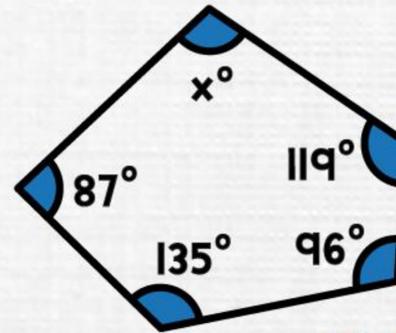
$$= 2 \times 180^\circ$$

$$= 360^\circ$$

$$x^\circ = 360^\circ - 128^\circ - 83^\circ - 57^\circ$$

$$= 92^\circ$$

$n = 5$



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$

$$= (5 - 2) \times 180^\circ$$

$$= 3 \times 180^\circ$$

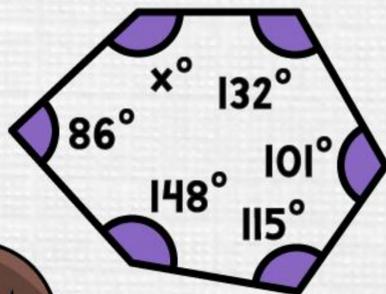
$$= 540^\circ$$

$$x^\circ = 540^\circ - 119^\circ - 96^\circ$$

$$- 135^\circ - 87^\circ$$

$$= 103^\circ$$

$n = 6$



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$

$$= (6 - 2) \times 180^\circ$$

$$= 4 \times 180^\circ$$

$$= 720^\circ$$

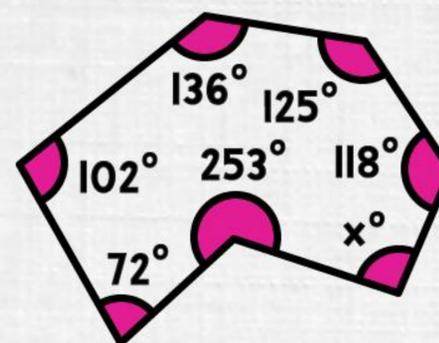
$$x^\circ = 720^\circ - 132^\circ - 101^\circ$$

$$- 115^\circ - 148^\circ - 86^\circ$$

$$= 138^\circ$$



$n = 7$



Hasil Tambah Sudut Pedalaman

$$= (n - 2) \times 180^\circ$$

$$= (7 - 2) \times 180^\circ$$

$$= 5 \times 180^\circ$$

$$= 900^\circ$$

$$x^\circ = 900^\circ - 125^\circ - 118^\circ - 253^\circ$$

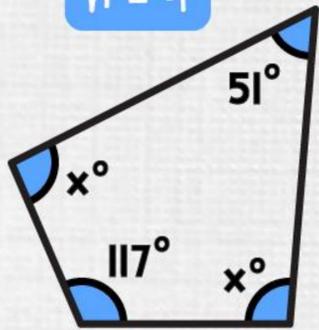
$$- 72^\circ - 102^\circ - 136^\circ$$

$$= 94^\circ$$

POLIGON

Kira nilai x°

$n = 4$



$$\begin{aligned} \text{Hasil Tambah Sudut Pedalaman} &= (n - 2) \times 180^\circ \\ &= (4 - 2) \times 180^\circ \\ &= 2 \times 180^\circ \\ &= 360^\circ \end{aligned}$$

$$51^\circ + x^\circ + 117^\circ + x^\circ = 360^\circ$$

$$2x^\circ + 168^\circ = 360^\circ$$

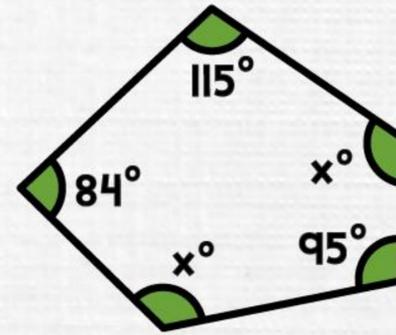
$$2x^\circ = 360^\circ - 168^\circ$$

$$2x^\circ = 192^\circ$$

$$x^\circ = \frac{192^\circ}{2}$$

$$x^\circ = 96^\circ$$

$n = 5$



$$\begin{aligned} \text{Hasil Tambah Sudut Pedalaman} &= (n - 2) \times 180^\circ \\ &= (5 - 2) \times 180^\circ \\ &= 3 \times 180^\circ \\ &= 540^\circ \end{aligned}$$

$$115^\circ + x^\circ + 95^\circ + x^\circ + 84^\circ = 540^\circ$$

$$2x^\circ + 294^\circ = 540^\circ$$

$$2x^\circ = 540^\circ - 294^\circ$$

$$2x^\circ = 246^\circ$$

$$x^\circ = \frac{246^\circ}{2}$$

$$x^\circ = 123^\circ$$

Hasil Tambah Sudut Pedalaman

$$\begin{aligned} &= (n - 2) \times 180^\circ \\ &= (6 - 2) \times 180^\circ \\ &= 4 \times 180^\circ \\ &= 720^\circ \end{aligned}$$

$$x^\circ + x^\circ + x^\circ + 117^\circ + 152^\circ + 85^\circ = 720^\circ$$

$$3x^\circ + 354^\circ = 720^\circ$$

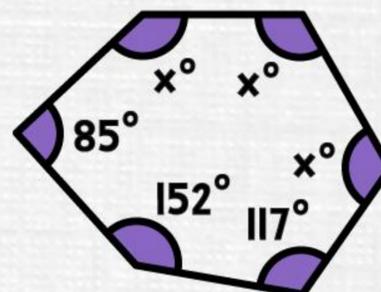
$$3x^\circ = 720^\circ - 354^\circ$$

$$3x^\circ = 366^\circ$$

$$x^\circ = \frac{366^\circ}{3}$$

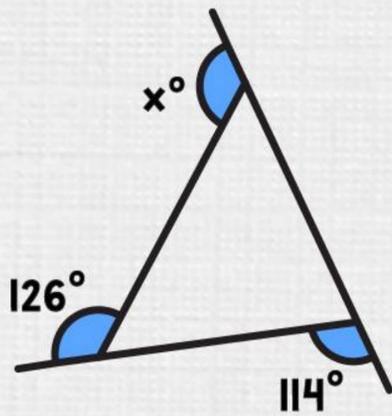
$$x^\circ = 122^\circ$$

$n = 6$



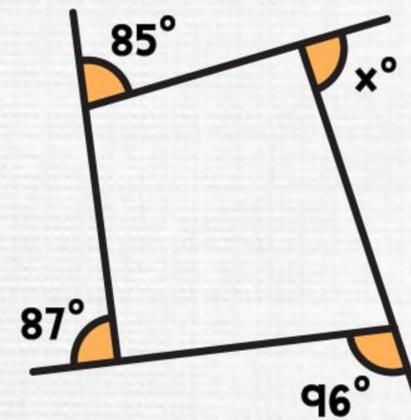
POLIGON

Sudut Peluaran

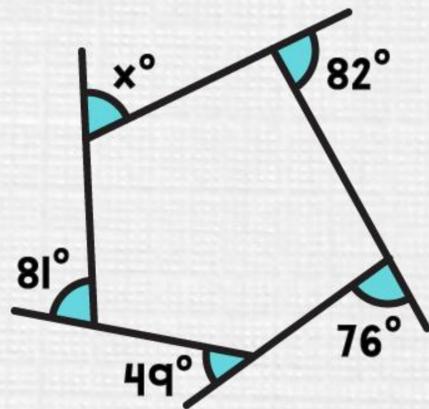


$$\begin{aligned} 114^\circ + 126^\circ + x^\circ &= 360^\circ \\ 240^\circ + x^\circ &= 360^\circ \\ x^\circ &= 360^\circ - 240^\circ \\ x^\circ &= 120^\circ \end{aligned}$$

hasil
tambah
semua sudut
peluaran
ialah 360°

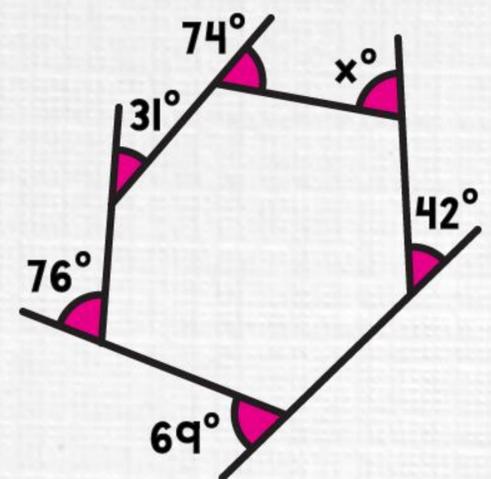
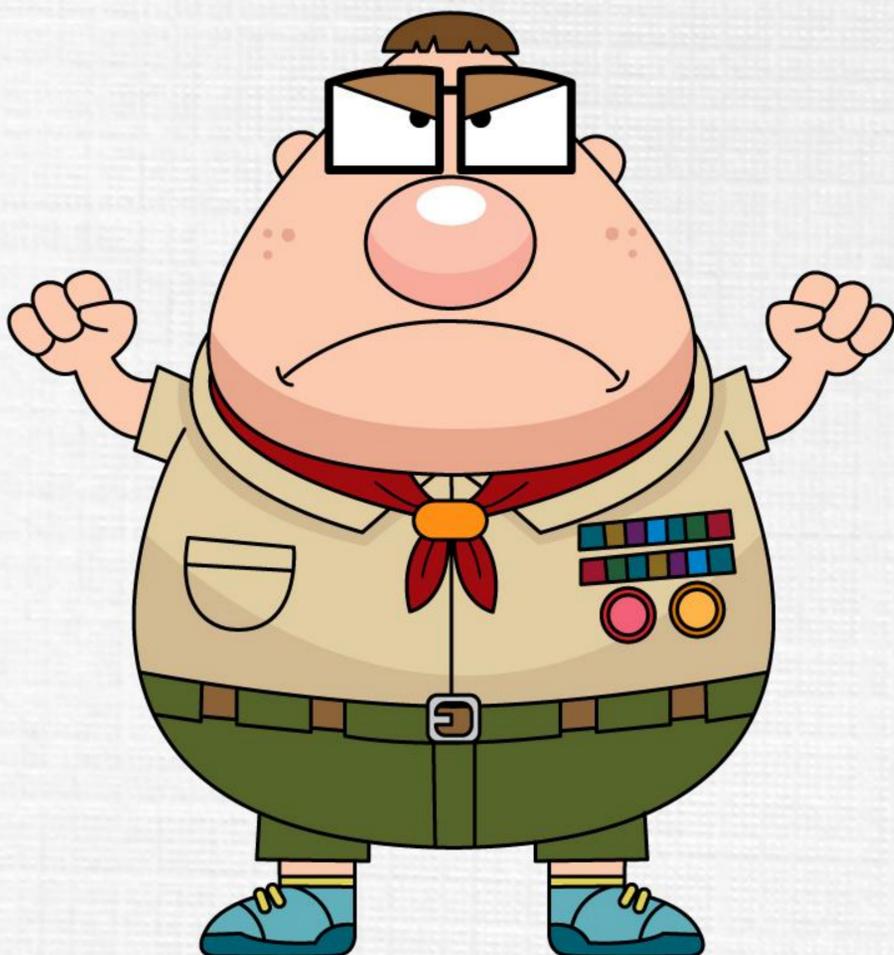


$$\begin{aligned} x^\circ + 96^\circ \\ + 87^\circ + 85^\circ &= 360^\circ \\ x^\circ + 268^\circ &= 360^\circ \\ x^\circ &= 360^\circ - 268^\circ \\ x^\circ &= 92^\circ \end{aligned}$$



$$\begin{aligned} 82^\circ + 76^\circ + 49^\circ \\ + 81^\circ + x^\circ &= 360^\circ \\ 288^\circ + x^\circ &= 360^\circ \\ x^\circ &= 360^\circ - 288^\circ \\ x^\circ &= 72^\circ \end{aligned}$$

berapa pun jumlah sisi
poligon, hasil tambah
semua sudut peluaran
tetap 360°

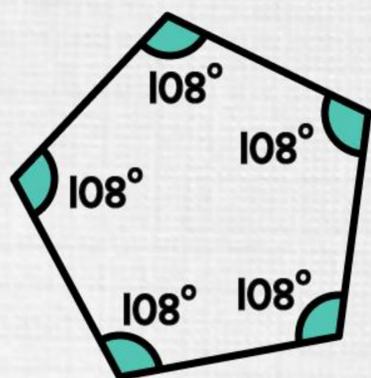


$$\begin{aligned} 42^\circ + 69^\circ + 76^\circ \\ + 31^\circ + 74^\circ + x^\circ &= 360^\circ \\ 292^\circ + x^\circ &= 360^\circ \\ x^\circ &= 360^\circ - 292^\circ \\ x^\circ &= 68^\circ \end{aligned}$$

POLIGON

Sudut Pedalaman Poligon Sekata

$n = 5$



$$\begin{aligned} \text{Hasil Tambah Sudut Pedalaman} &= (n - 2) \times 180^\circ \\ &= (5 - 2) \times 180^\circ \\ &= 3 \times 180^\circ \\ &= 540^\circ \end{aligned}$$

Sudut Pedalaman
bagi Pentagon

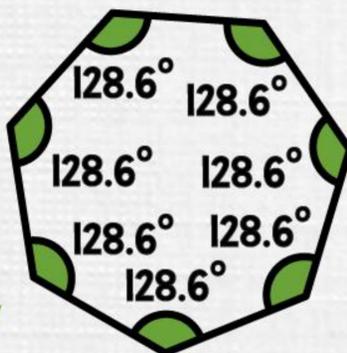
$$\frac{540^\circ}{n} = \frac{540^\circ}{5} = 108^\circ$$

$$\begin{aligned} \text{Hasil Tambah Sudut Pedalaman} &= (n - 2) \times 180^\circ \\ &= (6 - 2) \times 180^\circ \\ &= 4 \times 180^\circ \\ &= 720^\circ \end{aligned}$$

Sudut Pedalaman
bagi Heksagon

$$\frac{720^\circ}{n} = \frac{720^\circ}{6} = 120^\circ$$

$n = 7$

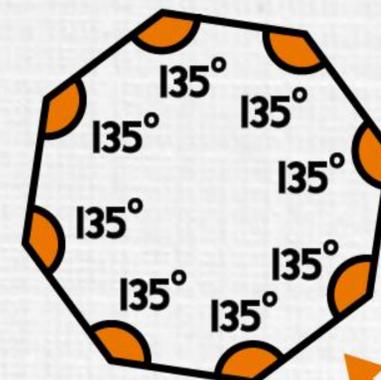


Sudut Pedalaman
bagi Heptagon

$$\frac{900^\circ}{n} = \frac{900^\circ}{7} = 128.6^\circ$$

$$\begin{aligned} \text{Hasil Tambah Sudut Pedalaman} &= (n - 2) \times 180^\circ \\ &= (7 - 2) \times 180^\circ \\ &= 5 \times 180^\circ \\ &= 900^\circ \end{aligned}$$

$n = 8$



Sudut Pedalaman
bagi Oktagon

$$\frac{1080^\circ}{n} = \frac{1080^\circ}{8} = 135^\circ$$

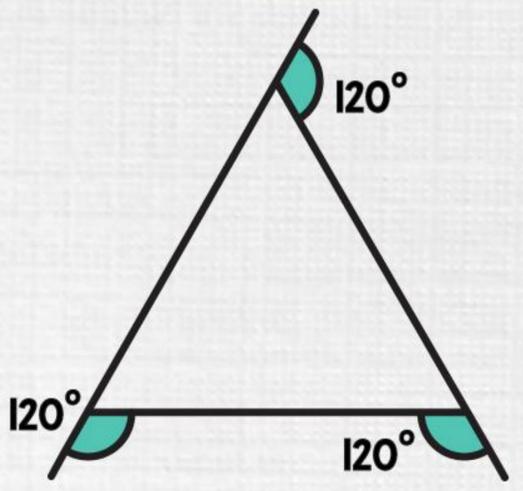
$$\begin{aligned} \text{Hasil Tambah Sudut Pedalaman} &= (n - 2) \times 180^\circ \\ &= (8 - 2) \times 180^\circ \\ &= 6 \times 180^\circ \\ &= 1080^\circ \end{aligned}$$



POLIGON

Sudut Peluaran Poligon Sekata

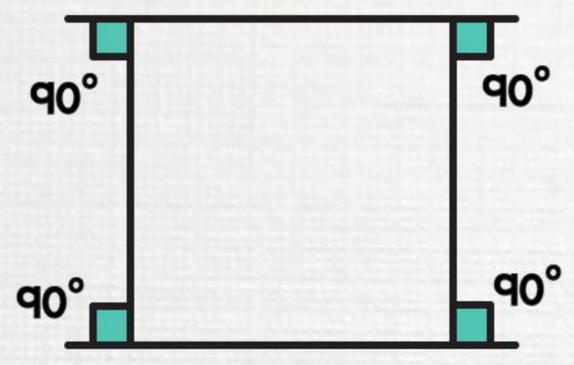
n = 3



Sudut Peluaran bagi Segi Tiga Sama Sisi

$$\frac{360^\circ}{n} = \frac{360^\circ}{3} = 120^\circ$$

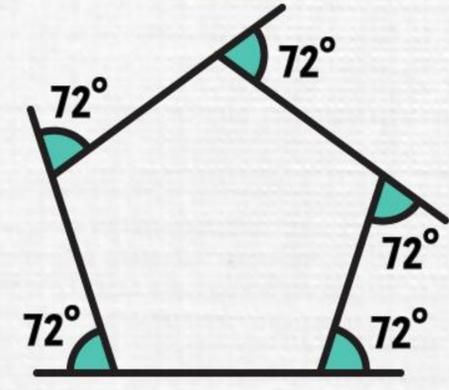
n = 4



Sudut Peluaran bagi Segi Empat Sama

$$\frac{360^\circ}{n} = \frac{360^\circ}{4} = 90^\circ$$

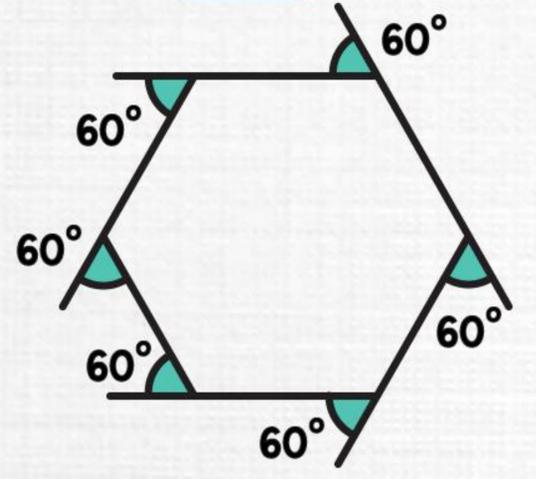
n = 5



Sudut Peluaran bagi Pentagon

$$\frac{360^\circ}{n} = \frac{360^\circ}{5} = 72^\circ$$

n = 6



Sudut Peluaran bagi Heksagon

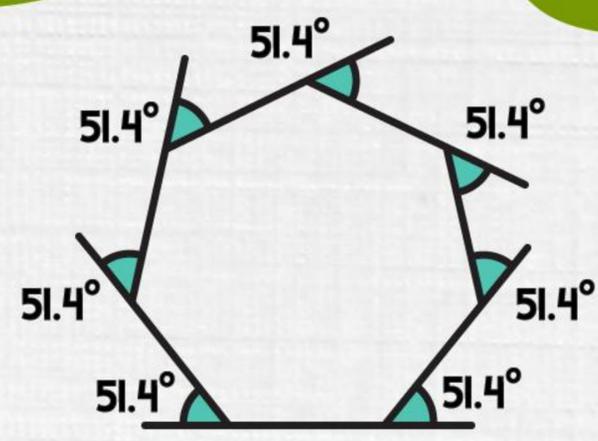
$$\frac{360^\circ}{n} = \frac{360^\circ}{6} = 60^\circ$$

poligon sekata mempunyai sudut pedalaman, sudut peluaran & panjang sisi yang sama

hasil tambah semua sudut peluaran ialah 360°



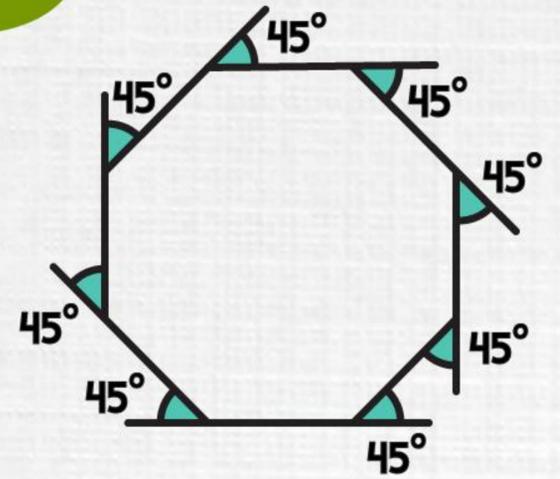
n = 7



Sudut Peluaran bagi Heptagon

$$\frac{360^\circ}{n} = \frac{360^\circ}{7} = 51.4^\circ$$

n = 8



Sudut Peluaran bagi Oktagon

$$\frac{360^\circ}{n} = \frac{360^\circ}{8} = 45^\circ$$



POLIGON

Kira bilangan sisi poligon sekata apabila diberi nilai sudut pedalaman

$$\text{Sudut Pedalaman} = 120^\circ$$

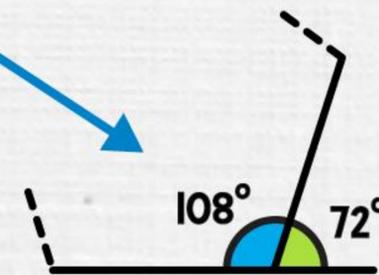
$$\begin{aligned}\frac{(n - 2) \times 180^\circ}{n} &= 120^\circ \\ 180n - 360 &= 120n \\ 180n - 120n &= 360 \\ 60n &= 360 \\ n &= \frac{360}{60} \\ n &= 6\end{aligned}$$

bahagi dengan n untuk dapatkan nilai satu sudut pedalaman

kedua-dua cara beri jawapan yang sama

$$\begin{aligned}\text{Sudut Peluaran} &= \frac{360^\circ}{n} \\ 60^\circ &= \frac{360^\circ}{n} \\ 60n &= 360 \\ n &= \frac{360}{60} \\ n &= 6\end{aligned}$$

boleh juga guna sudut peluaran untuk kira bilangan sisi poligon sekata



$$\text{Sudut Pedalaman} = 108^\circ$$

$$\begin{aligned}\frac{(n - 2) \times 180^\circ}{n} &= 108^\circ \\ 180n - 360 &= 108n \\ 180n - 108n &= 360 \\ 72n &= 360 \\ n &= \frac{360}{72} \\ n &= 5\end{aligned}$$

$$\begin{aligned}\text{Sudut Peluaran} &= \frac{360^\circ}{n} \\ 72^\circ &= \frac{360^\circ}{n} \\ 72n &= 360 \\ n &= \frac{360}{72} \\ n &= 5\end{aligned}$$

kapur putih



K A P U R P U T E H

"success is the sum of small efforts
repeated day in and day out"

