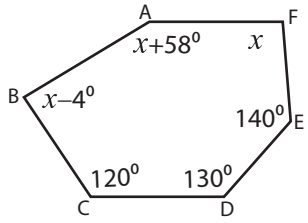
Name : _____ Score : _____

Sheet 1

Angles in Polygon

Example:



Sum of the interior angles = (Number of sides – 2) x 180^0

$= (6-2) \times 180^0$

$= 4 \times 180 = \mathbf{720^0}$

Sum of the interior angles = $120^0 + 140^0 + 130^0 + x+58^0 + x - 4^0 + x$

$\mathbf{720^0} = 444^0 + 3x$

$3x = \mathbf{720^0} - 444^0 = 276^0$

$x = \frac{276^0}{3} = \mathbf{92^0}$

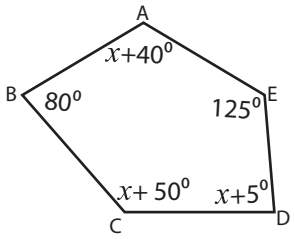
$\angle A = x+58^0 = \mathbf{92^0} + 58^0 = \mathbf{150^0}$

$\angle B = x-4^0 = \mathbf{92^0} - 4^0 = \mathbf{88^0}$

$\angle F = x = \mathbf{92^0}$

Find the missing angle for each irregular polygon.

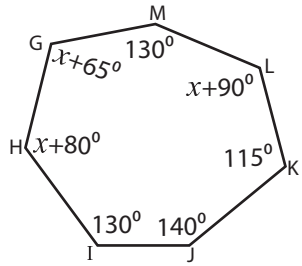
1)



Sum of the interior angles = _____

x = ____ ;∠A = ____ ;∠C = ____ ;∠D = ____

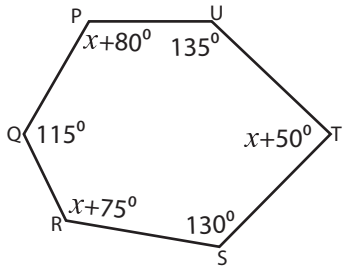
2)



Sum of the interior angles = _____

x = ____ ;∠G = ____ ;∠H = ____ ;∠L = ____

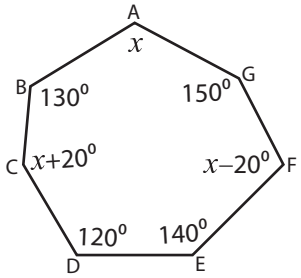
3)



Sum of the interior angles = _____

x = ____ ;∠P = ____ ;∠R = ____ ;∠T = ____

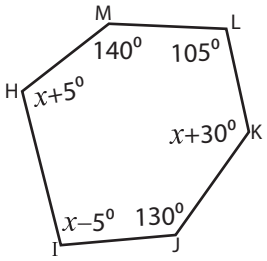
4)



Sum of the interior angles = _____

x = ____ ;∠A = ____ ;∠C = ____ ;∠F = ____

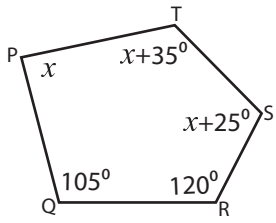
5)



Sum of the interior angles = _____

x = ____ ;∠H = ____ ;∠I = ____ ;∠K = ____

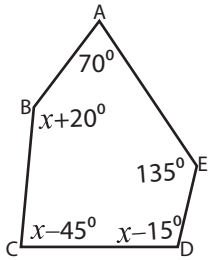
6)



Sum of the interior angles = _____

x = ____ ;∠P = ____ ;∠S = ____ ;∠T = ____

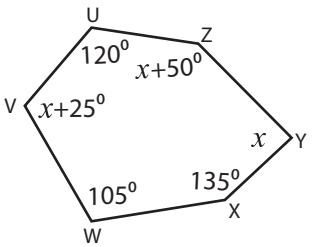
7)



Sum of the interior angles = _____

x = ____ ;∠B = ____ ;∠C = ____ ;∠D = ____

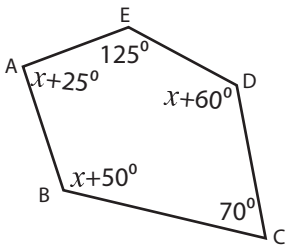
8)



Sum of the interior angles = _____

x = ____ ;∠V = ____ ;∠Y = ____ ;∠Z = ____

9)



Sum of the interior angles = _____

x = ____ ;∠A = ____ ;∠B = ____ ;∠D = ____

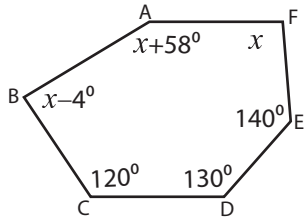
Name : _____ Score : _____

Answer key

Angles in Polygon

Sheet 1

Example:



Sum of the interior angles = (Number of sides – 2) x 180^0

= (6 – 2) x 180^0

= 4 x 180 = **720^0**

Sum of the interior angles = $120^0 + 140^0 + 130^0 + x+58^0 + x - 4^0 + x$

$720^0 = 444^0 + 3x$

$3x = 720^0 - 444^0 = 276^0$

$x = \frac{276^0}{3} = 92^0$

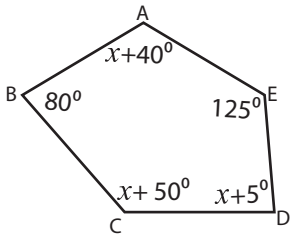
$\angle A = x+58^0 = 92^0 + 58^0 = 150^0$

$\angle B = x-4^0 = 92^0 - 4^0 = 88^0$

$\angle F = x = 92^0$

Find the missing angle for each irregular polygon.

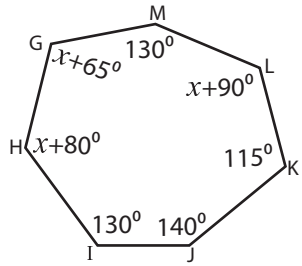
1)



Sum of the interior angles = **540^0**

x = **80^0** ;$\angle A$ = **120^0** ;$\angle C$ = **130^0** ;$\angle D$ = **85^0**

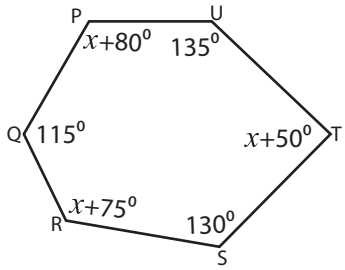
2)



Sum of the interior angles = **900^0**

x = **50^0** ;$\angle G$ = **115^0** ;$\angle H$ = **130^0** ;$\angle L$ = **140^0**

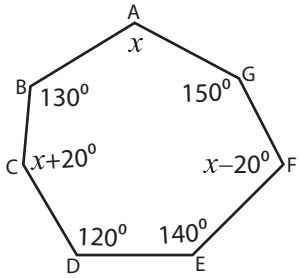
3)



Sum of the interior angles = **720^0**

x = **45^0** ;$\angle P$ = **125^0** ;$\angle R$ = **120^0** ;$\angle T$ = **95^0**

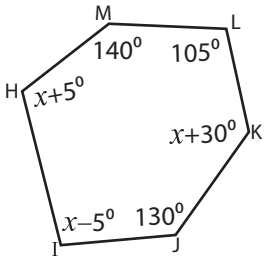
4)



Sum of the interior angles = **900^0**

x =**120^0** ;$\angle A$ = **120^0** ;$\angle C$ = **140^0** ;$\angle F$ = **100^0**

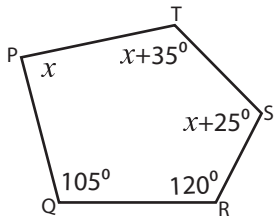
5)



Sum of the interior angles = **720^0**

x =**105^0** ;$\angle H$ = **110^0** ;$\angle I$ = **100^0** ;$\angle K$ = **135^0**

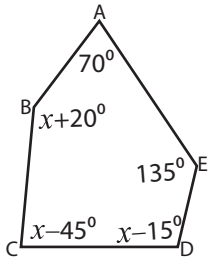
6)



Sum of the interior angles = **540^0**

x = **85^0** ;$\angle P$ = **85^0** ;$\angle S$ = **110^0** ;$\angle T$ = **120^0**

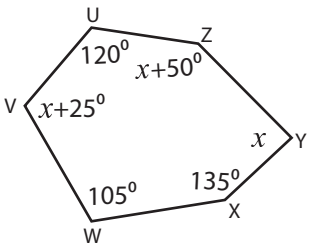
7)



Sum of the interior angles = **540^0**

x =**125^0** ;$\angle B$ = **145^0** ;$\angle C$ = **80^0** ;$\angle D$ = **110^0**

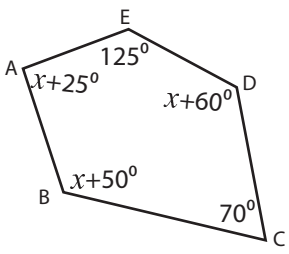
8)



Sum of the interior angles = **720^0**

x = **95^0** ;$\angle V$ = **120^0** ;$\angle Y$ = **95^0** ;$\angle Z$ = **145^0**

9)



Sum of the interior angles = **540^0**

x = **70^0** ;$\angle A$ = **95^0** ;$\angle B$ = **120^0** ;$\angle D$ = **130^0**