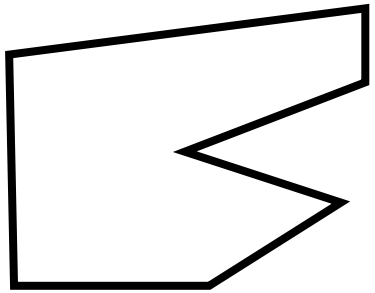
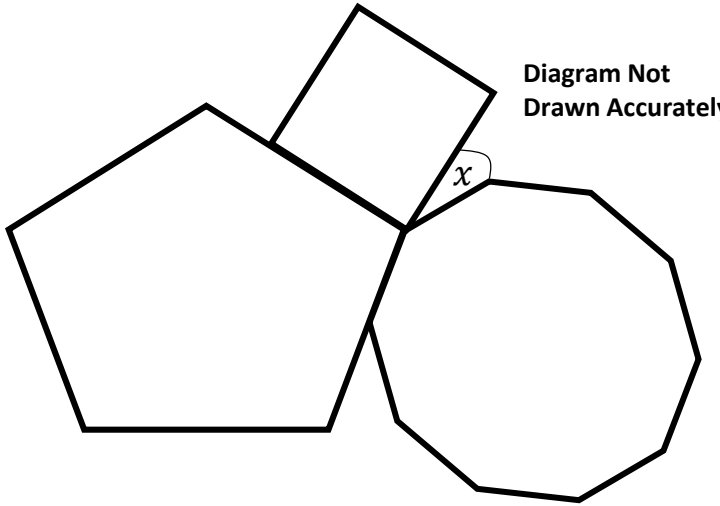
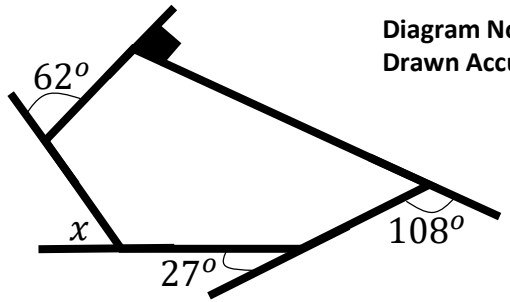
Timester Challenge
Angles in Polygons

Sum of Interior Angles =	Size of Exterior Angle =	Number of Sides =
Calculate the sum of the interior angles of the following shape.  **Diagram Not Drawn Accurately** Bronze	Calculate the size of an interior angle of a regular hexagon. Silver	 **Diagram Not Drawn Accurately** The diagram shows three regular polygons. Calculate the size of angle x. Gold
Work out the value of the angle x.  **Diagram Not Drawn Accurately** Bronze	Each interior angle of a regular polygon is 140^o. Work out the number of sides of the regular polygon. Silver	

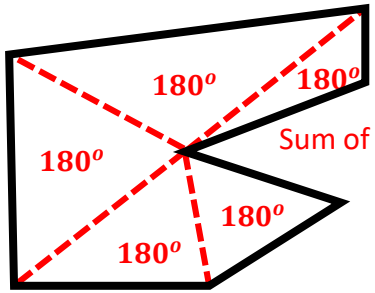
Timester Challenge

Angles in Polygons

Answers

Sum of Interior Angles = $(n-2)\times 180$

Calculate the sum of the interior angles of the following shape.

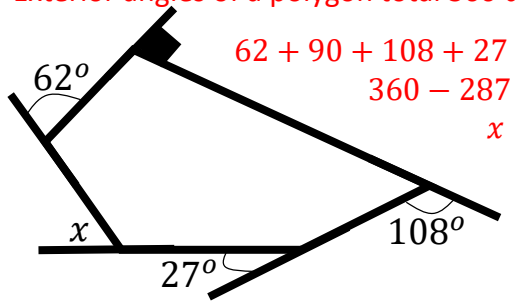


Sum of Int $= (7-2)\times 180$
$= 5\times 180$
$= 900^o$

Bronze

Work out the value of the angle x.

Exterior angles of a polygon total 360 degrees.



$62 + 90 + 108 + 27 = 287$
$360 - 287 = 73^o$
$x = 73^o$

Bronze

Size of Exterior Angle = $360 \div n$

Calculate the size of an interior angle of a regular hexagon.

Exterior = $360 \div 6 = 60^o$
Interior = $180 - 60 = 120^o$

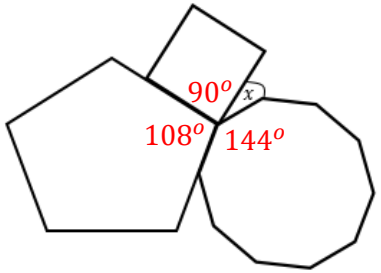
Silver

Each interior angle of a regular polygon is 140^o. Work out the number of sides of the regular polygon.

Exterior = $180 - 140 = 40^o$
Number of Sides = $360 \div 40 = 9$ sides

Silver

Number of Sides = $360 \div Ext$



The diagram shows three regular polygons.
Calculate the size of angle x.

	Square	Pentagon	Decagon
Ext	$360 \div 4 = 90$	$360 \div 5 = 72$	$360 \div 10 = 36$
Int	$180 - 90 = 90$	$180 - 72 = 108$	$180 - 36 = 144$

Angles around a point add up to make 360 degrees.

$90 + 108 + 144 = 342$
$360 - 342 = 18^o$

So $x = 18^o$

Gold