

Name: \_\_\_\_\_ ( ) Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Lesson Worksheet 8.2A(I)

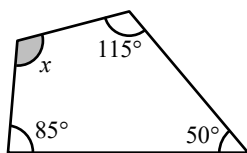
Objective: To solve questions involving the sum of interior angles of polygons.

The sum of interior angles of an  $n$ -sided polygon is  $(n - 2) \times 180^\circ$ .

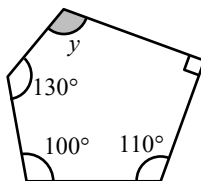
[Reference:  $\angle$  sum of polygon]

1. In each of the following, find the unknown.

(a)

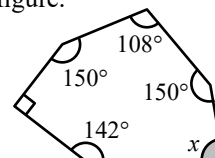


(b)



Demonstration

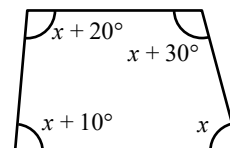
Find  $x$  in the figure.



Solution

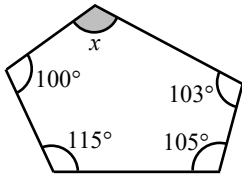
$$\begin{aligned} \therefore x + 142^\circ + 90^\circ + 150^\circ + \\ 108^\circ + 150^\circ &= (6 - 2) \times 180^\circ \\ (\angle \text{ sum of polygon}) \\ \therefore x + 640^\circ &= 720^\circ \\ x &= \underline{80^\circ} \end{aligned}$$

2. Find  $x$  in the figure.

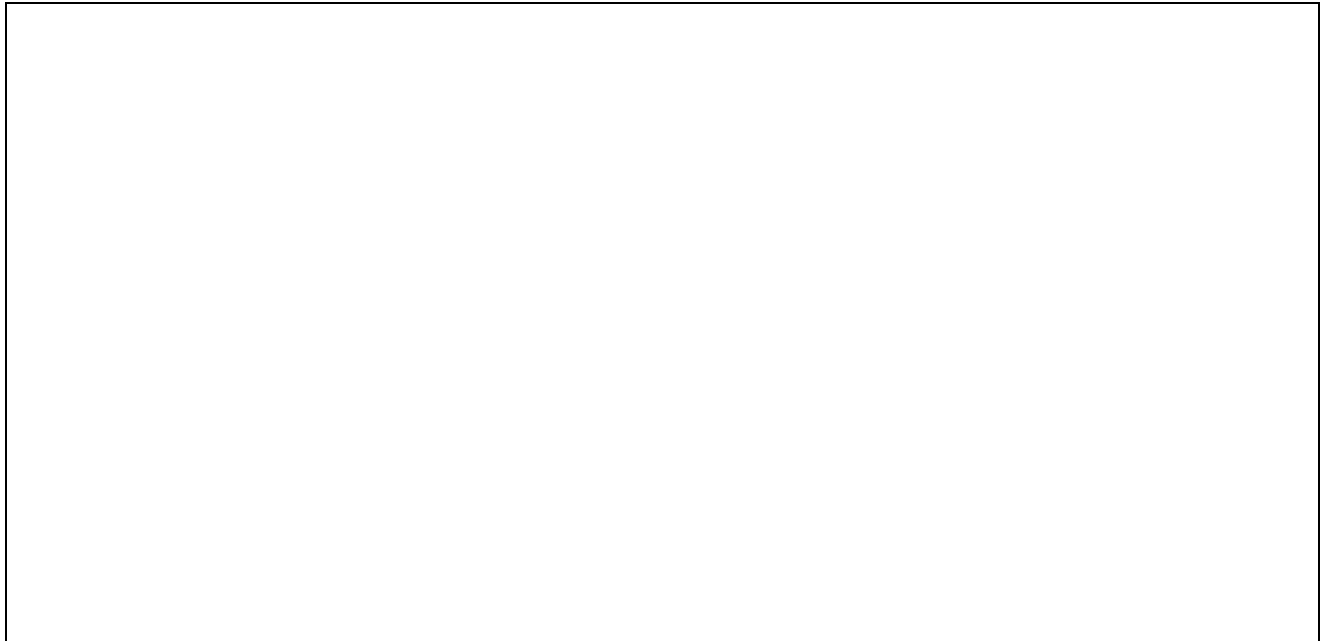
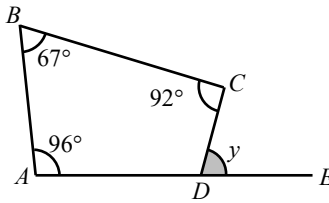


3. In each of the following, find the unknown.

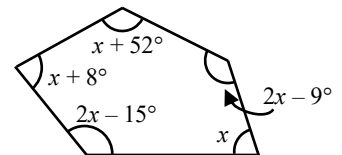
(a)



(b)



4. Find  $x$  in the figure.



5. If the sum of interior angles of a polygon is  $1800^\circ$ , find the number of sides of the polygon.

Let  $n$  be the number of sides of the polygon.

$$1800^\circ = (n - 2) \times 180^\circ$$

6. If the sum of interior angles of a polygon is  $2160^\circ$ , find the number of sides of the polygon.

Let  $n$  be the number of sides of the polygon.

$$2160^\circ = (n - 2) \times 180^\circ$$