

Interior Angles: Multiple Unknowns — Answers



Angles in a triangle sum to 180° . Set up an equation and solve for the unknown.

1. Find x (two equal angles).



Solution

$$60^\circ + x + x = 180^\circ$$

$$2x = 120^\circ; x = 60^\circ$$

2. Find x .



Solution

$$2x + 3x + 40^\circ = 180^\circ$$

$$5x = 140^\circ; x = 28^\circ$$

3. Find y .



Solution

$$50^\circ + 2y + y = 180^\circ$$

$$3y = 130^\circ; y = 43.3^\circ$$

4. Find x .



Solution

$$x + (x+10^\circ) + (x+20^\circ) = 180^\circ$$

$$3x + 30^\circ = 180^\circ; x = 50^\circ$$

5. Find a .



Solution

$$4a + 3a + 2a = 180^\circ$$

$$9a = 180^\circ; a = 20^\circ$$

6. Find m .



Solution

$$m + 60^\circ + (m+10^\circ) = 180^\circ$$

$$2m = 110^\circ; m = 55^\circ$$

7. Find x .



Solution

$$(x-5^\circ) + x + (x+5^\circ) = 180^\circ$$

$$3x = 180^\circ; x = 60^\circ$$

8. Find n .



Solution

$$45^\circ + n + 2n = 180^\circ$$

$$3n = 135^\circ; n = 45^\circ$$

9. Find p .



Solution

$$5p + 3p + 40^\circ = 180^\circ$$

$$8p = 140^\circ; p = 17.5^\circ$$

Exterior Angles of Polygons — Answers



An exterior angle and its adjacent interior angle sum to 180° . Find each angle.

10. Find the exterior angle.



Solution

Regular hexagon interior = 120°

Exterior = $180^\circ - 120^\circ = 60^\circ$

11. Find exterior angle y .



Solution

$y = 180^\circ - 110^\circ$

$y = 70^\circ$

12. Find exterior angle z .



Solution

$z = 180^\circ - 85^\circ$

$z = 95^\circ$

13. Find interior angle at vertex.



Solution

Interior = $180^\circ - 120^\circ$

= 60°

14. Find exterior angle m .



Solution

Regular pentagon interior = 108°

$m = 180^\circ - 108^\circ = 72^\circ$

15. Find exterior angle n .



Solution

$n = 180^\circ - 75^\circ$

$n = 105^\circ$

16. Find interior angle.



Solution

Interior = $180^\circ - 60^\circ$

= 120°

17. Find interior angle.



Solution

Interior = $180^\circ - 40^\circ$

= 140°

18. Find exterior angle k .



Solution

$k = 180^\circ - 105^\circ$

$k = 75^\circ$