

6-9: Interior and Exterior Angles of Triangles

1. Sample answer: An exterior angle is equal to the sum of its remote interior angles.
2. 135° or 90° ; Sample answer: Each exterior angle is supplementary to its adjacent interior angle. The interior angles are 45° , 45° , and 90° so the exterior angles are 135° , 135° , and 90° .
3. See work: Triangle should show angles of 32° , 87° , and 61° and an exterior angle adjacent to the 87° angle with a measure of 93° .
4. $m\angle 1 = 63.3^\circ$, $m\angle 2 = 37.3^\circ$;
Sample answer: I know that $m\angle 2$ is 37.3° because the measure of its congruent alternate interior angle is 37.3° . To find $m\angle 1$, I can find the sum of 79.4° and 37.3° and subtract that sum from 180° .
5. $m\angle 3 = 63.3^\circ$, $m\angle 4 = 142.7^\circ$;
Sample answer:
 $m\angle 2 + m\angle 4 = 180^\circ$, so $m\angle 4 = 142.7^\circ$; $m\angle 3 + 79.4^\circ + 37.3^\circ = 180^\circ$;
so $m\angle 3 = 63.3^\circ$
6. $m\angle A = 18^\circ$, $m\angle B = 36^\circ$, $m\angle C = 126^\circ$
7. exterior
remote interior angles
59; 56
115
8. $m\angle 1 = 120^\circ$; $m\angle 2 = 35^\circ$
9. 83.5°
10. 129° ; Sample answer: My friend found $m\angle 3$, not $m\angle 4$.
11. 116°
12. Sample answer:
 $180^\circ - (25x + 19)^\circ$; 111°
13. 52.8°
14. A
15. 150