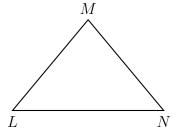
13 February 2023

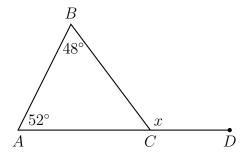
8.1 Classwork: External angles

- 1. A triangle has two angles measuring 70° and 60° respectively. Find the measure of the third angle.
- 2. Given $\triangle LMN$ with $m\angle L=2x+20$, $m\angle N=3x-5$, and $m\angle M=x+15$. Find x.

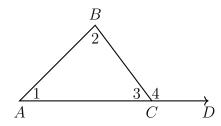


3. The measures in degrees of the three angles of a triangle are 2x, x + 10, and 3x - 40. Find x.

4. As shown below, triangle ABC has $m\angle A=52^\circ$ and $m\angle B=48^\circ$. Find the measure of the external angle $\angle BCD=x$.



5. Given $\triangle ABC$ with \overrightarrow{ACD} .



Which equation is always true?

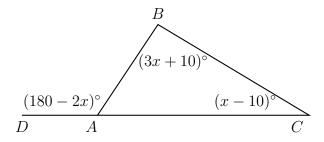
(a)
$$m \angle 3 = m \angle 1 + m \angle 2$$

(c)
$$m \angle 4 = m \angle 1 + m \angle 2$$

(b)
$$m \angle 3 = m \angle 1 - m \angle 2$$

(d)
$$m \angle 4 = m \angle 3 - m \angle 2$$

6. In $\triangle ABC$ shown below, side \overline{AC} is extended to point D with $m \angle DAB = (180 - 2x)^{\circ}$, $m \angle C = (x - 10)^{\circ}$, and $m \angle B = (3x + 10)^{\circ}$. Solve for x.



- 7. A regular hexagon is rotated about its center. Which degree measure will carry the regular hexagon onto itself?
 - (a) 45°

(c) 120°

(b) 90°

- (d) 135°
- 8. What is the smallest non-zero angle of rotation about its center that would map the octagon onto itself?

