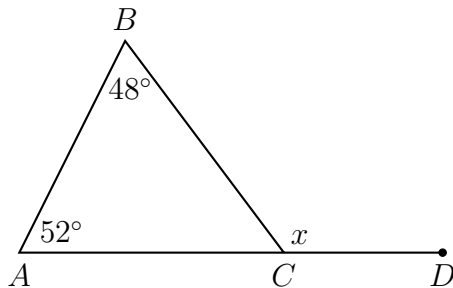
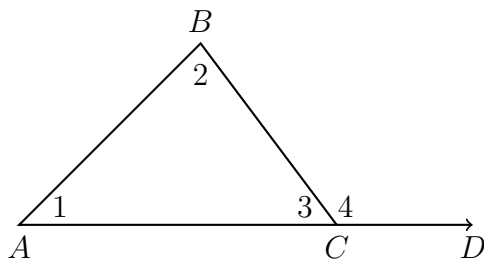


11.12 External angles

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

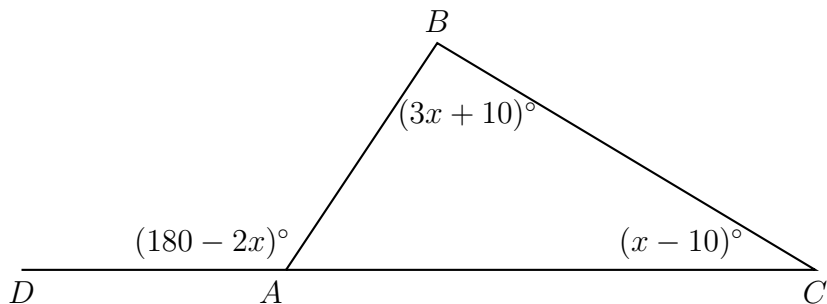


2. Given $\triangle ABC$ with \overrightarrow{ACD} .



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) $m\angle 4 = m\angle 3 - m\angle 2$
3. 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 $m\angle B = (3x + 10)^\circ$.

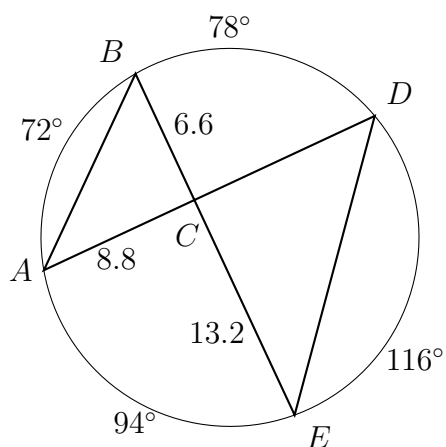


What is $m\angle BAC$?

4. Randy's basketball is in the shape of a sphere with a maximum circumference of 29.5 inches. Determine and state the volume of the basketball, to the *nearest cubic inch*.
5. What are the coordinates of the center and the length of the radius of the circle whose equation is $(x - 6)^2 + (y + 8)^2 = 64$?
6. In a right triangle, the acute angles have the relationship $\sin(2x + 9) = \cos(x + 12)$.

What is the value of x ?

7. As shown, circle O has chords \overline{AD} and \overline{BE} intersecting at C , and $m\widehat{AB} = 72^\circ$, $m\widehat{BD} = 78^\circ$, $m\widehat{AE} = 94^\circ$, and $m\widehat{DE} = 116^\circ$. $BC = 6.6$, $AC = 8.8$, and $CE = 13.2$.



- (a) Write down $m\angle B$, $m\angle D$.
- (b) Write down $m\angle A$, $m\angle E$.
- (c) Find $m\angle ACB$.
- (d) Find the scale factor and CD .