9-4 Do Now Quiz: Isosceles Triangle
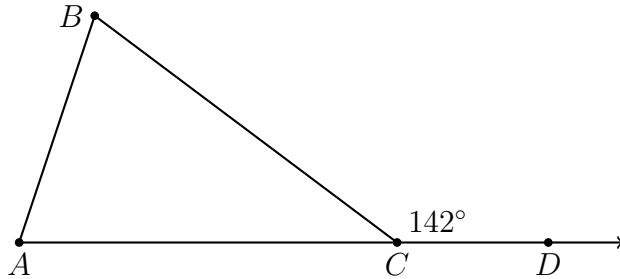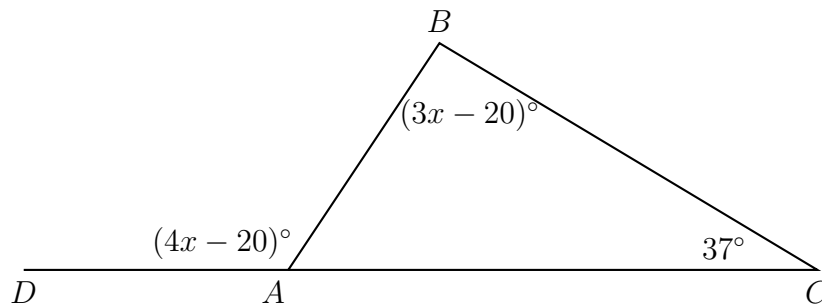
1. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$, and $m\angle BCD = 142°$. Find $m\angle A$.



2. In $\triangle ABC$ shown below, side $\overline{AC}$ is extended to point D with $m\angle DAB = (4x - 20)°$, $m\angle C = 37°$, and $m\angle B = (3x - 20)°$.

What is $m\angle BAC$?

3. Given $M(3,4)$ and $N(6,-2)$, find the length of $\overline{MN}$. Leave the result as a simplified radical.

4. After a dilation with center $(0,0)$, the image of $\overline{ST}$ is $\overline{S'T'}$. If $ST = 8.2$ and $S'T' = 28.7$, find the scale factor of this dilation.

5. In right triangle ABC shown below, point D is on $\overline{AB}$ and point E is on $\overline{BC}$ such that $\overline{AC} \parallel \overline{DE}$. Given $AB = 21$, $BC = 14$, and $EC = 9$.
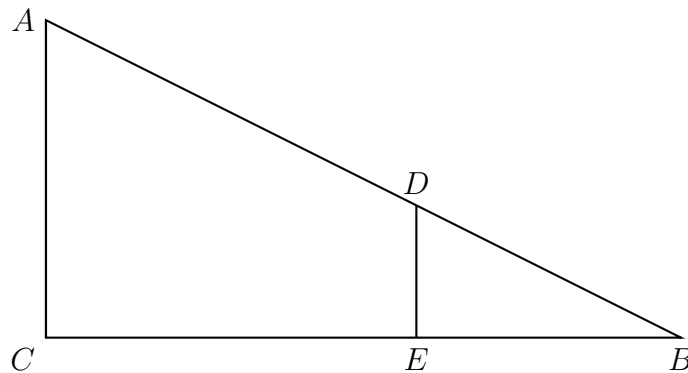
   (a) Find the length of $\overline{BE}$.

   (b) Find the scale factor, k, dilating $\triangle DBE \rightarrow \triangle ABC$, centered at B.

   (c) Find BD.