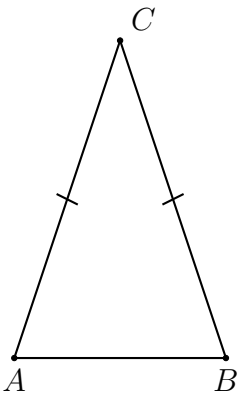
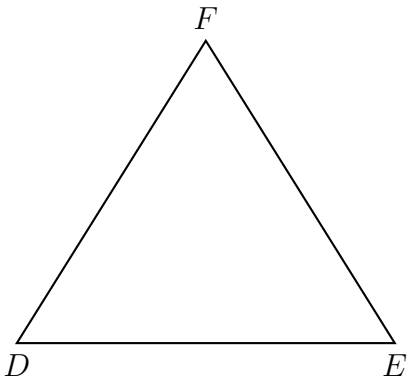
8.2 Classwork: Isosceles triangles and transversals

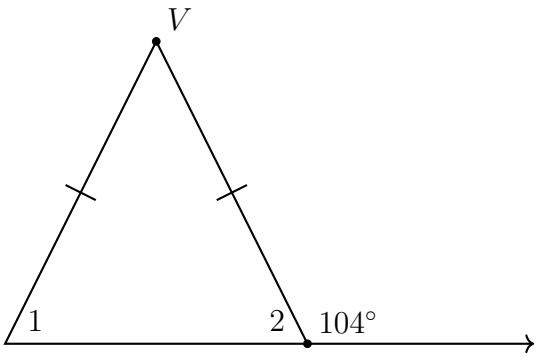
1. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$, $\text{m}\angle A = 70°$. Find $\text{m}\angle B$ and $\text{m}\angle C$.



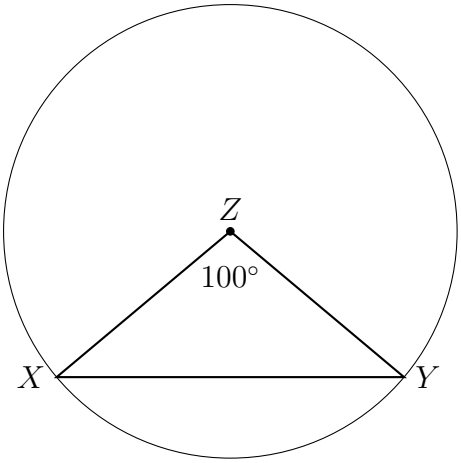
2. Shown below is isosceles $\triangle DEF$. Mark the congruent legs $\overline{DF} \cong \overline{DE}$. If $\text{m}\angle F = 65°$ then find the other two angle measures.



3. Given the triangle shown with congruent sides marked and external angle measuring 104°. Find the measures of the base angles 1 and 2, and the measure of the vertex angle, $\angle V$.



4. Given circle with center Z and isosceles $\triangle XYZ$. $\mathrm{m}\angle Z = 100$. Find $\mathrm{m}\angle Y$.



5. Given two parallel lines and a transversal, as shown, with $m\angle 6 = 70°$. Write down the value of each angle measure.

(a) $m\angle 1 =$

(b) $m\angle 2 =$

(c) $m\angle 3 =$

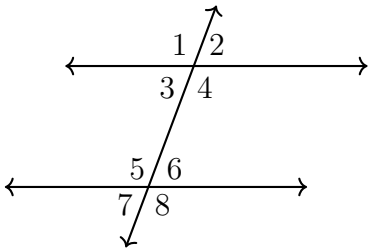
(d) $m\angle 4 =$

(e) $m\angle 5 =$

(f) $m\angle 6 =$

(g) $m\angle 7 =$

(h) $m\angle 8 =$

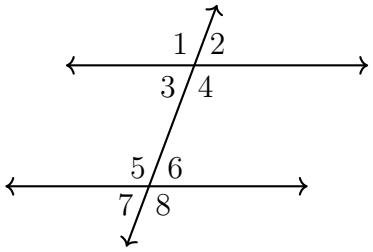


6. Given two parallel lines and a transversal, as shown. Write down each value, given that $m\angle 5 = 120°$.

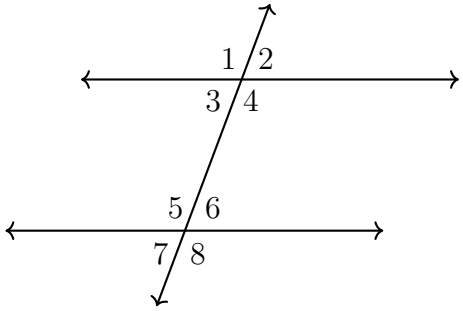
(a) $m\angle 3 =$

(b) $m\angle 2 =$

(c) $m\angle 4 = 2x$. Find x

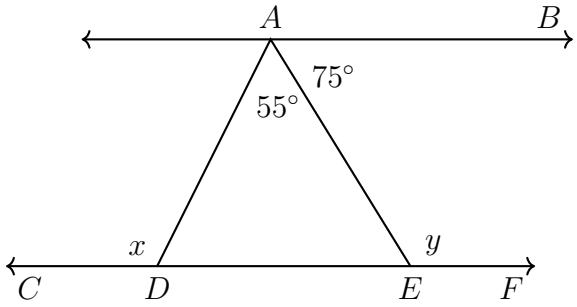


7. Given two parallel lines and a transversal, with $m\angle 4 = 3x$ and $m\angle 5 = x + 70$. Write an equation, then solve for x.

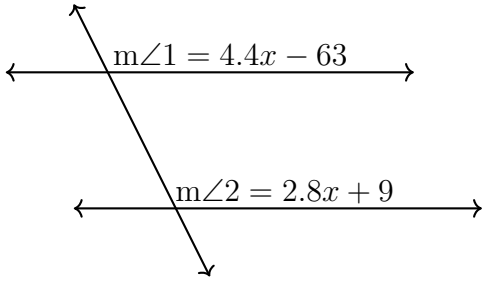


8. Given parallel lines $\overleftrightarrow{AB} \parallel \overleftrightarrow{CF}$, $m\angle BAE = 75°$ and $m\angle DAE = 55°$.

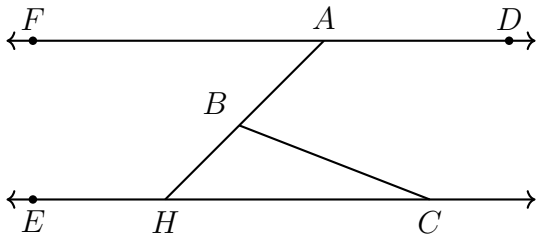
   Find $m\angle ADC = x$ and $m\angle AEF = y$.



9. Two parallel lines intersect a transversal. Given corresponding angles $\text{m}\angle 1 = 4.4x - 63$ and $\text{m}\angle 2 = 2.8x + 9$, find the measure of $\angle 1$.



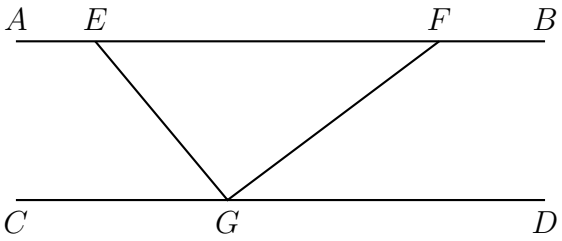
10. In the diagram below, $\overline{FAD} \parallel \overline{EHC}$, and $\overline{ABH}$ and $\overline{BC}$ are drawn.



If $m\angle FAB = 48°$ and $m\angle ECB = 18°$, what is $m\angle ABC$?

(a) $18°$
(c) $66°$
(b) $48°$
(d) $114°$

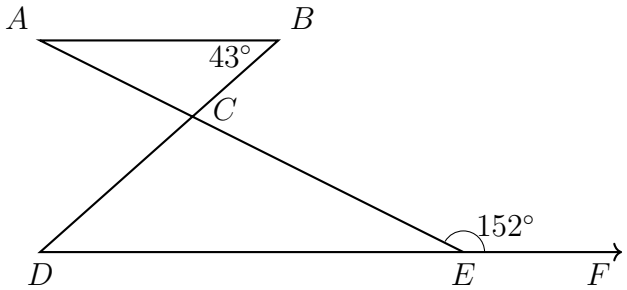
11. In the diagram below, $\overline{AEFB} \parallel \overline{CGD}$, and $\overline{GE}$ and $\overline{GF}$ are drawn.



If $m\angle EFG = 32°$ and $m\angle AEG = 137°$, what is $m\angle EGF$?

(a) $11°$
(c) $75°$
(b) $43°$
(d) $105°$

12. In the diagram below, $\overline{AB} \parallel \overline{DEF}$, $\overline{AB}$ and $\overline{BD}$ intersect at C, $m\angle B = 43°$, and $m\angle CEF = 152°$.



Which statement is true?

(a) $m\angle D = 28°$
(c) $m\angle ACD = 71°$
(b) $m\angle A = 43°$
(d) $m\angle BCE = 109°$