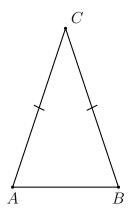
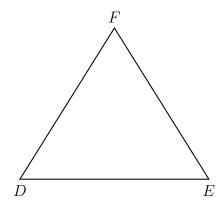
14 February 2023

8.2 Classwork: Isosceles triangles and transversals

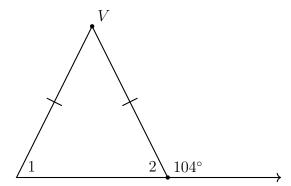
1. Given isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$, $m \angle A = 70^{\circ}$. Find $m \angle B$ and $m \angle C$.



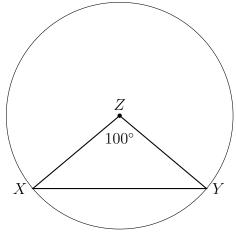
2. Shown below is isosceles $\triangle DEF$. Mark the congruent legs $\overline{DF}\cong \overline{DE}$. If m $\angle F=65^\circ$ then find the other two angle measures.



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 $\triangle XYZ$. $m\angle Z = 100$. Find $m\angle Y$.



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

(a)
$$m \angle 1 =$$

(e)
$$m \angle 5 =$$



(f)
$$m \angle 6 =$$

(c)
$$m \angle 3 =$$

(g)
$$m \angle 7 =$$

(d)
$$m \angle 4 =$$

(h)
$$m \angle 8 =$$

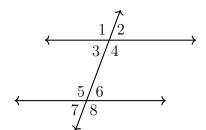


6. Given two parallel lines and a transversal, as shown. Write down each value, given that $m\angle 5=120^{\circ}$.

(a)
$$m \angle 3 =$$

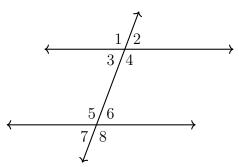
(b)
$$m \angle 2 =$$

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



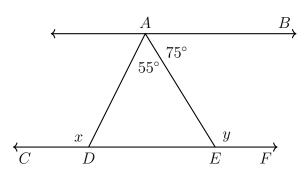
Name:

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.

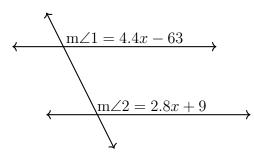


8. Given parallel lines $\overrightarrow{AB} \parallel \overrightarrow{CF}$, $m \angle BAE = 75^{\circ}$ and $m \angle DAE = 55^{\circ}$.

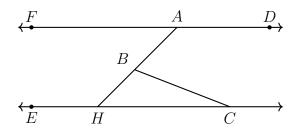
Find $m \angle ADC = x$ and $m \angle AEF = y$.



9. Two parallel lines intersect a transversal. Given corresponding angles $m\angle 1 = 4.4x - 63$ and $m\angle 2 = 2.8x + 9$, 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 $m \angle FAB = 48^{\circ}$ and $m \angle ECB = 18^{\circ}$, what is $m \angle ABC$?

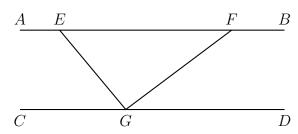
(a) 18°

(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 $m \angle EFG = 32^{\circ}$ and $m \angle AEG = 137^{\circ}$, what is $m \angle EGF$?

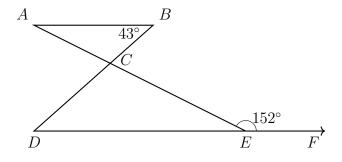
(a) 11°

(c) 75°

(b) 43°

(d) 105°

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



Which statement is true?

(a) $m \angle D = 28^{\circ}$

(c) $m \angle ACD = 71^{\circ}$

(b) $m\angle A = 43^{\circ}$

(d) $m \angle BCE = 109^{\circ}$