
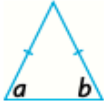
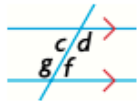
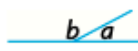
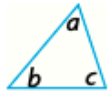
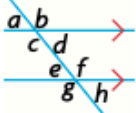




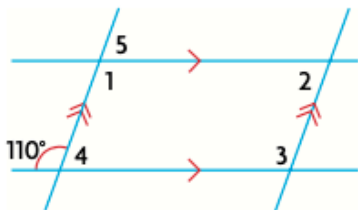
A-16 Angle Properties

Here is a review of special angle relationships.

Complementary angles $a + b = 90^\circ$ 	Isosceles triangle $a = b$ 	Alternate interior angles $c = f, d = g$ 	Supplementary angles $a + b = 180^\circ$ 
Sum of the angles of a triangle $a + b + c = 180^\circ$ 	Corresponding angles $a = e, b = f, c = g, d = h$ 	Vertically opposite angles $a = b, c = d$ 	Exterior angle of a triangle $a + b = c$ 

EXAMPLE 1

Determine the angles formed by the parallel lines.



Solution

$$\begin{aligned}\angle 4 &= 180^\circ - 110^\circ \\ &= 70^\circ\end{aligned}$$

$$\begin{aligned}\angle 5 &= \angle 4 \\ &= 70^\circ\end{aligned}$$

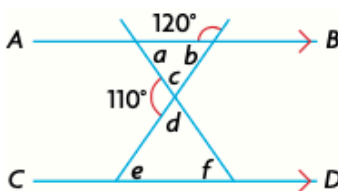
$$\begin{aligned}\angle 1 &= 180^\circ - \angle 5 \\ &= 180^\circ - 70^\circ \\ &= 110^\circ\end{aligned}$$

$$\begin{aligned}\angle 2 &= \angle 5 \\ &= 70^\circ\end{aligned}$$

$$\begin{aligned}\angle 3 &= 180^\circ - \angle 4 \\ &= 180^\circ - 70^\circ \\ &= 110^\circ\end{aligned}$$

EXAMPLE 2

Determine the angles in the triangles.



Solution

$$\begin{aligned}\angle b &= 180^\circ - 120^\circ \\ &= 60^\circ\end{aligned}$$

$$\begin{aligned}\angle e &= \angle b \\ &= 60^\circ\end{aligned}$$

$$\begin{aligned}\angle a &= \angle f \\ &= 50^\circ\end{aligned}$$

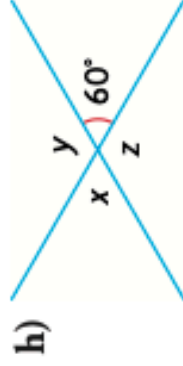
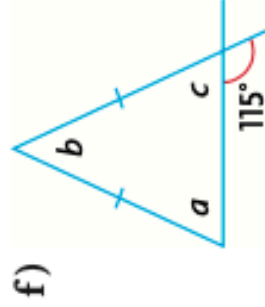
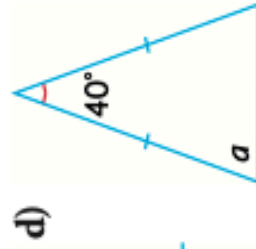
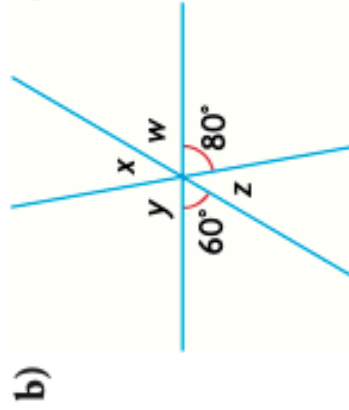
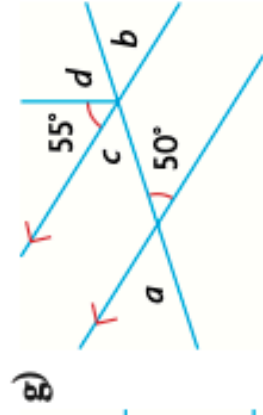
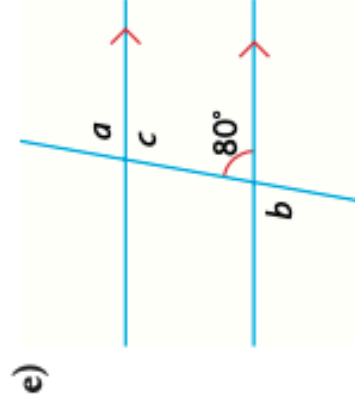
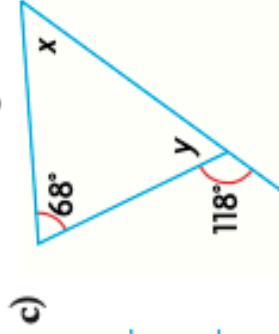
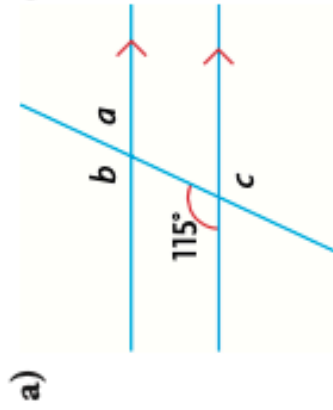
$$\begin{aligned}\angle c &= 180^\circ - 110^\circ \\ &= 70^\circ\end{aligned}$$

$$\begin{aligned}\angle d &= \angle c \\ &= 70^\circ\end{aligned}$$

$$\begin{aligned}\angle f &= 180^\circ - \angle d - \angle e \\ &= 180^\circ - 70^\circ - 60^\circ \\ &= 50^\circ\end{aligned}$$

Practice

1. Find the measure of each unknown angle.



2. Find each missing measure.

