## Written Exercises

**Draw a triangle that satisfies the conditions stated. If no triangle can satisfy the conditions, write *not possible*.**

**A**

**1.** **a.** An acute isosceles triangle
**b.** A right isosceles triangle
**c.** An obtuse isosceles triangle

**2.** **a.** An acute scalene triangle
**b.** A right scalene triangle
**c.** An obtuse scalene triangle

**3.** A triangle with two acute exterior angles

**4.** A triangle with two obtuse exterior angles

**Complete.**

**5.** $m\angle 6 + m\angle 7 + m\angle 8 =$ ___?___.

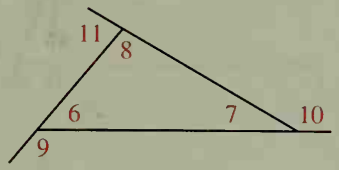
**6.** If $m\angle 6 = 52$ and $m\angle 11 = 82$, then $m\angle 7 =$ ___?___.

**7.** If $m\angle 6 = 55$ and $m\angle 10 = 150$, then $m\angle 8 =$ ___?___.

**8.** If $m\angle 6 = x$, $m\angle 7 = x - 20$, and $m\angle 11 = 80$, then $x =$ ___?___.

**9.** If $m\angle 8 = 4x$, $m\angle 7 = 30$, and $m\angle 9 = 6x - 20$, then $x =$ ___?___.

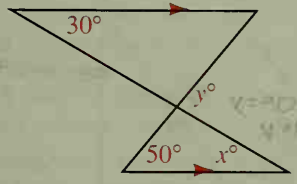
**10.** $m\angle 9 + m\angle 10 + m\angle 11 =$ ___?___.



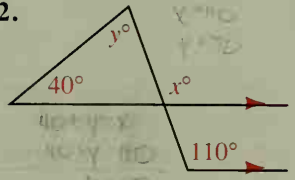

**Exs. 5–10**

**Find the values of $x$ and $y$.**

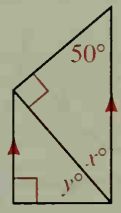
**11.**




**12.**

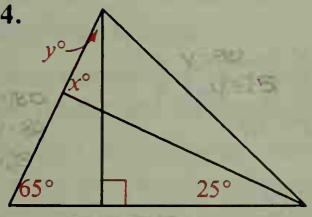



**13.**

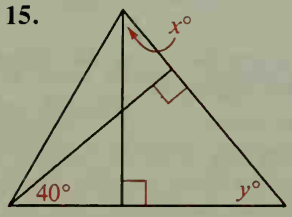



**B**

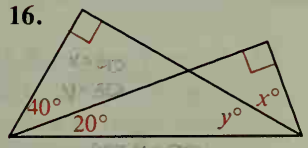
**14.**




**15.**




**16.**




**17.** The lengths of the sides of a triangle are $4n$, $2n + 10$, and $7n - 15$. Is there a value of $n$ that makes the triangle equilateral? Explain.

**18.** The lengths of the sides of a triangle are $3t$, $5t - 12$, and $t + 20$.
**a.** Find the value(s) of $t$ that make the triangle isosceles.
**b.** Does any value of $t$ make the triangle equilateral? Explain.