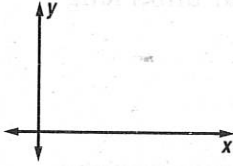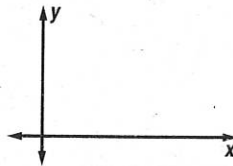## 4-8 Skills Practice

Triangles and Coordinate Proof

Position and label each triangle on the coordinate plane.
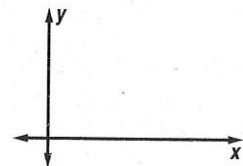
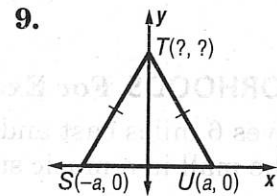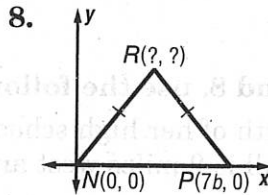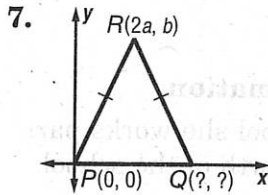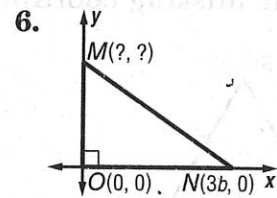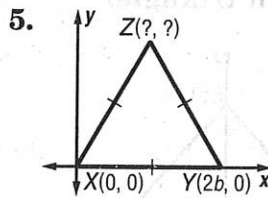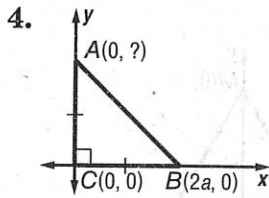1. right $\triangle FGH$ with legs a units and b units long

2. isosceles $\triangle KLP$ with base $\overline{KP}$ $6b$ units long

3. isosceles $\triangle AND$ with base $\overline{AD}$ $5a$ units long

Name the missing coordinates of each triangle.

4. $A(0, ?)$, $C(0, 0)$, $B(2a, 0)$

5. $Z(?, ?)$, $X(0, 0)$, $Y(2b, 0)$

6. $M(?, ?)$, $O(0, 0)$, $N(3b, 0)$

7. $R(2a, b)$, $P(0, 0)$, $Q(?, ?)$

8. $R(?, ?)$, $N(0, 0)$, $P(7b, 0)$

9. $T(?, ?)$, $S(-a, 0)$, $U(a, 0)$

10. **PROOF** Write a coordinate proof to prove that in an isosceles right triangle, the segment from the vertex of the right angle to the midpoint of the hypotenuse is perpendicular to the hypotenuse.

Given: Isosceles right $\triangle ABC$ with right $\angle ABC$; M is the midpoint of $\overline{AC}$.
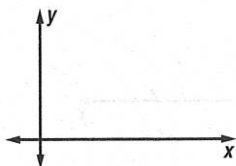
Prove: $\overline{BM} \perp \overline{AC}$
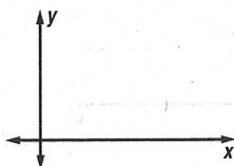
4-8 Practice

Triangles and Coordinate Proof
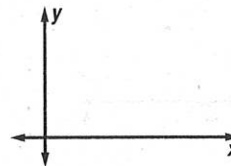
Position and label each triangle on the coordinate plane.

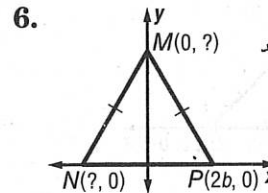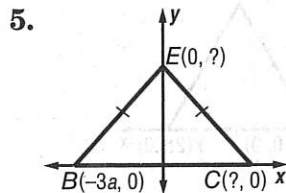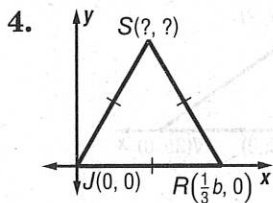1. equilateral $\triangle SWY$ with sides $\frac{1}{4}a$ units long

2. isosceles $\triangle BLP$ with base $\overline{BL}$ $3b$ units long

3. isosceles right $\triangle DGJ$ with hypotenuse $\overline{DJ}$ and legs $2a$ units long

Name the missing coordinates of each triangle.

4.

$S(?, ?)$

$J(0, 0)$ $R\left(\frac{1}{3}b, 0\right)$

5.

$E(0, ?)$

$B(-3a, 0)$ $C(?, 0)$

6.

$M(0, ?)$

$N(?, 0)$ $P(2b, 0)$

NEIGHBORHOODS For Exercises 7 and 8, use the following information.

Karina lives 6 miles east and 4 miles north of her high school. After school she works part time at the mall in a music store. The mall is 2 miles west and 3 miles north of the school.

7. **Proof** Write a coordinate proof to prove that Karina's high school, her home, and the mall are at the vertices of a right triangle.

   Given: $\triangle SKM$
   Prove: $\triangle SKM$ is a right triangle.

   $M(-2, 3)$ $K(6, 4)$ $S(0, 0)$
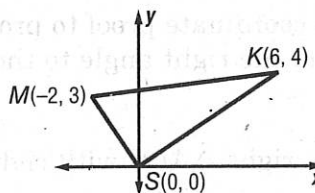
8. Find the distance between the mall and Karina's home.