Name _____ Date _____
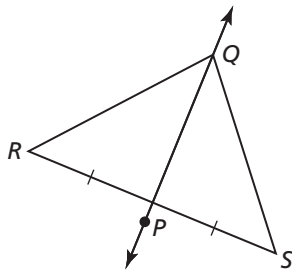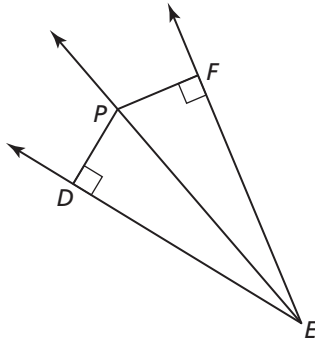
In Exercises 1–3, tell whether the information in the diagram allows you to conclude that point *P* lies on the perpendicular bisector of $\overline{RS}$, or on the angle bisector of $\angle DEF$. Explain your reasoning.
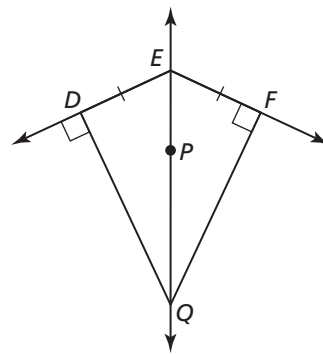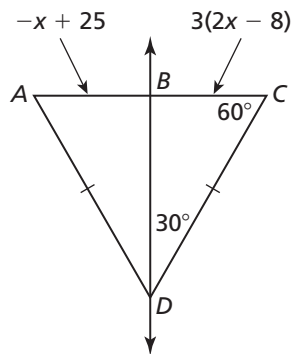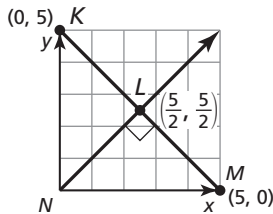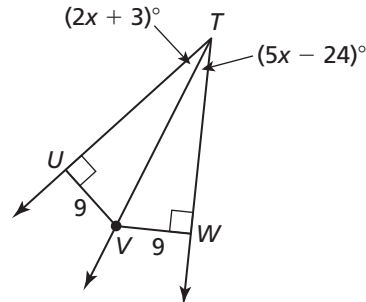
1.

2.

3.

In Exercises 4–6, find the indicated measure. Explain your reasoning.

4. *AC*

$-x + 25$ $3(2x - 8)$

$60°$

$30°$

5. $m\angle LNM$

$(0, 5)$ *K*

$\left(\frac{5}{2}, \frac{5}{2}\right)$

M $(5, 0)$

N

6. $m\angle UTW$

$(2x + 3)°$ *T*

$(5x - 24)°$

9

V 9 W

7. Write an equation of the perpendicular bisector of the segment with the endpoints $G(3, 7)$ and $H(-1, -5)$.

8. In the figure, line *m* is the perpendicular bisector of $\overline{PR}$. Is point *Q* on line *m*? Is point *S* on line *m*? Explain your reasoning.

P

13

10

m

Q

S

10

12

R
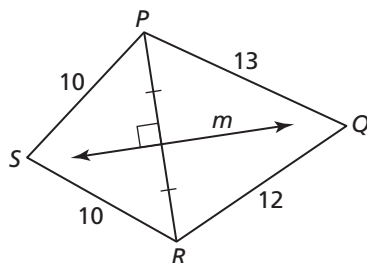
9. You are installing a fountain in the triangular garden pond shown in the figure. You want to place the fountain the same distance from each side of the pond. Describe a way to determine the location of the fountain using angle bisectors.