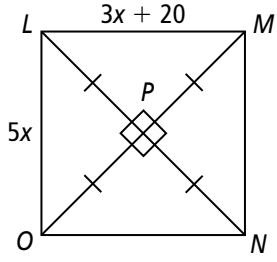
Name _____ Class _____ Date _____

Practice

Form G

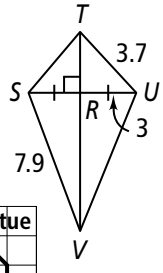
Perpendicular and Angle Bisectors

Use the figure at the right for Exercises 1–4.



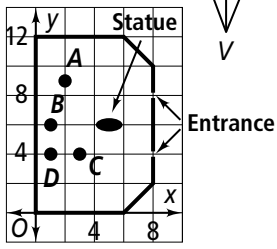
1. What is the relationship between $\overline{LN}$ and $\overline{MO}$?
   $\overline{LN}$ is the perpendicular bisector of $\overline{MO}$.
2. What is the value of x? 10
3. Find LM. 50
4. Find LO. 50

Use the figure at the right for Exercises 5–8.



5. From the information given in the figure, how is $\overline{TV}$ related to $\overline{SU}$?
   $\overline{TV}$ is the perpendicular bisector of $\overline{SU}$.
6. Find TS. 3.7
7. Find UV. 7.9
8. Find SU. 6

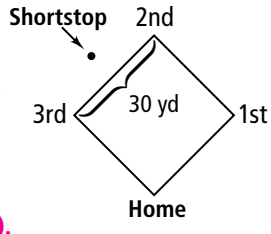
9. At the right is a layout for the lobby of a building placed on a coordinate grid.



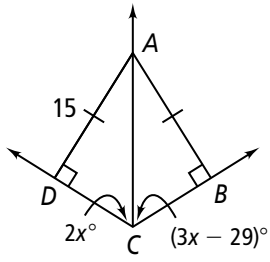
   a. At which of the labeled points would a receptionist chair be equidistant from both entrances? B

   b. Is the statue equidistant from the entrances? How do you know? Yes; the statue is at a point that lies on the perpendicular bisector of a segment joining the entrances.

10. In baseball, the baseline is a segment connecting the bases. A shortstop is told to play back 3 yd from the baseline and exactly the same distance from second base and third base. Describe how the shortstop could estimate the correct spot. There are 30 yd between bases. Assume that the shortstop has a stride of 36 in.
    Answers may vary. Sample: Pace off 15 strides (15 yd) from third base, make a 90° left turn, and count off three more strides (3 yd).



Use the figure at the right for Exercises 11–15.



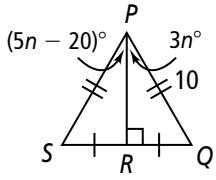
11. According to the figure, how far is A from $\overline{CD}$? From $\overline{CB}$? 15; 15
12. How is $\overrightarrow{CA}$ related to $\angle DCB$? Explain.
    $\overrightarrow{CA}$ bisects $\angle DCB$; Converse of $\angle$ Bis. Thm.
13. Find the value of x. 29
14. Find $m\angle ACD$ and $m\angle ACB$. 58; 58
15. Find $m\angle DAC$ and $m\angle BAC$. 32; 32

Name _____ Class _____ Date _____

Practice (continued) *Form G*

Perpendicular and Angle Bisectors

Use the figure at the right for Exercises 16–19.



16. According to the diagram, what are the lengths of $\overline{PQ}$ and $\overline{PS}$? **10; 10**

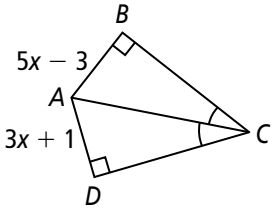
17. How is $\overline{PR}$ related to $\angle SPQ$? **$\overline{PR}$ bisects $\angle SPQ$.**

18. Find the value of n. **10**

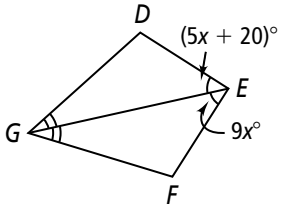
19. Find $m\angle SPR$ and $m\angle QPR$. **Both measure 30.**

Algebra Find the indicated values of the variables and measures.

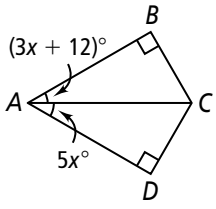
20. x, BA, DA **2; 7; 7**



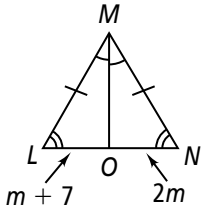
21. x, $m\angle DEF$ **5; 90**



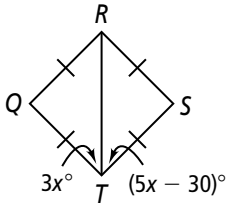
22. x, $m\angle DAB$ **6; 60**



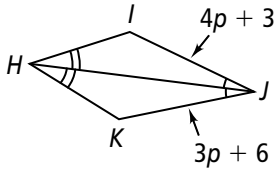
23. m, LO, NO **7; 14; 14**



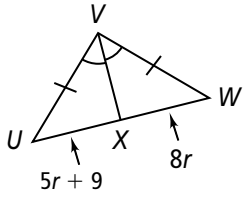
24. x, $m\angle QTS$ **15; 90**



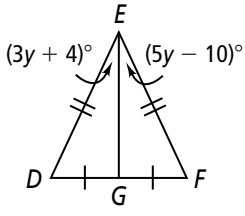
25. p, IJ, KJ **3; 15, 15**



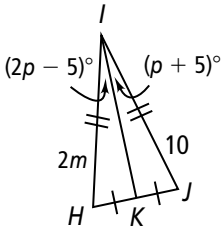
26. r, UW **3; 48**



27. y, $m\angle DEF$ **7; 50**

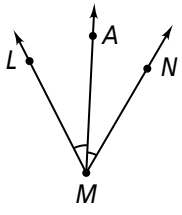


28. m, p **5; 10**



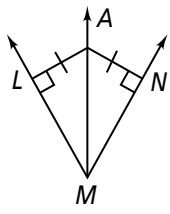
Writing Determine whether A must be on the bisector of $\angle LMN$. Explain.

29.



Yes; $\angle LMA \cong \angle NMA$, so $\overrightarrow{MA}$ is a bisector of $\angle LMN$.

30.



Yes; A is equidistant from both rays of the angle, so A lies on the bisector.