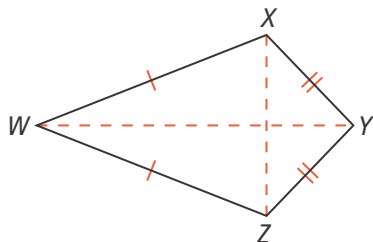


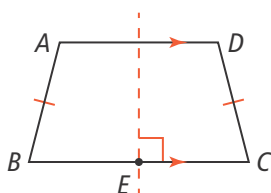


UNDERSTAND

12. **Construct Arguments** Write a two-column proof to show that the diagonals of a kite are perpendicular.

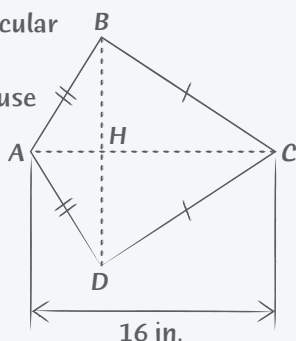


13. Prove that the perpendicular bisector of $\overline{BC}$ is also the perpendicular bisector of $\overline{AD}$. (Hint: Extend $\overline{BA}$ and $\overline{CD}$ to meet at point M , and show that the perpendicular bisector of $\overline{BC}$ contains M .)



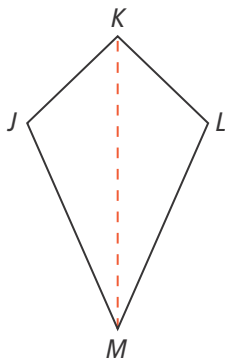
14. **Error Analysis** What is Emery's error?

$\overline{BD}$ is the perpendicular bisector of $\overline{AC}$, so $HC = 8$ in. because $AC = 16$ in.



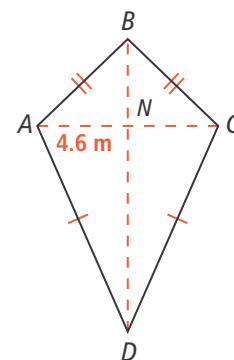
15. **Higher Order Thinking**

Given kite $JKLM$ with diagonal $\overline{KM}$, $JK < JM$, and $KL < LM$, prove that $\angle JMK$ is congruent to $\angle LMK$.

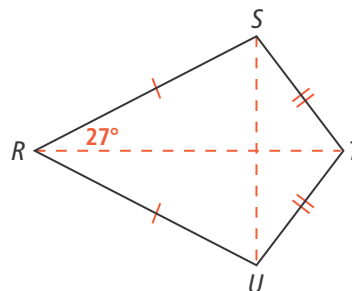


PRACTICE

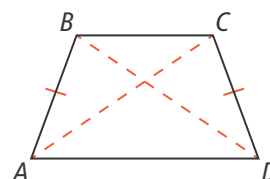
16. Given kite $ABCD$, in which $AN = 4.6$ m, what is AC ?
SEE EXAMPLE 1



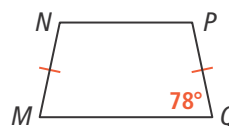
17. Given kite $RSTU$, what is $m\angle RUS$? SEE EXAMPLE 2



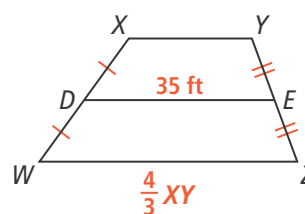
18. Write a two-column proof to show that the diagonals of an isosceles trapezoid are congruent. SEE EXAMPLES 3 AND 4



19. Given trapezoid $MNPQ$, what is $m\angle MNP$?
SEE EXAMPLE 4

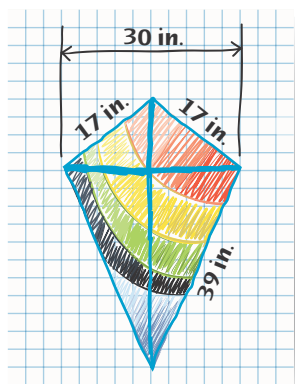


20. Given trapezoid $WXYZ$, what is XY ?
SEE EXAMPLE 5

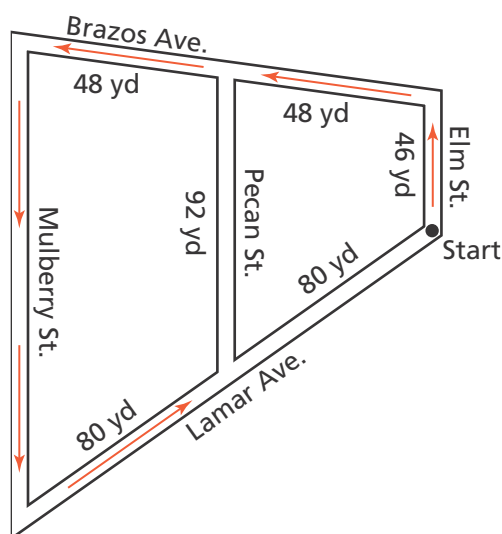


APPLY

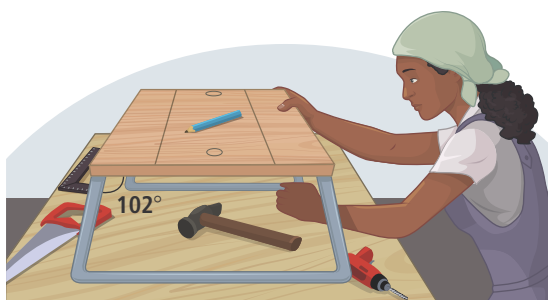
21. **Model With Mathematics** Gregory plans to make a kite like the one shown. He has 1,700 square inches of plastic sheeting. Does Gregory have enough plastic to make the kite? Explain.



22. **Reason** Coach Murphy uses the map to plan a 2-mile run for the track team. How many times will the team run the route shown?



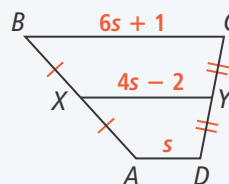
23. **Use Structure** Abby builds a bench with the seat parallel to the ground. She bends pipe to make the leg and seat supports. At what angles should she bend the pipe? Explain.



ASSESSMENT PRACTICE

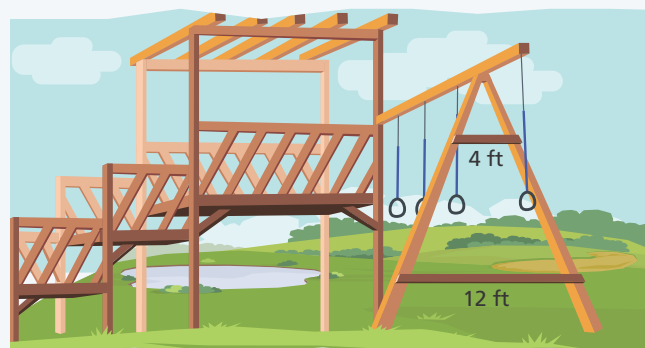
24. The _____ of a kite are always _____.

25. **SAT/ACT** Given trapezoid $ABCD$, what is the length of $\overline{XY}$?



- Ⓐ $3\frac{3}{5}$ Ⓑ $4\frac{2}{3}$ Ⓒ 5 Ⓓ 11 Ⓔ 18

26. **Performance Task** Cindy is a member of a volunteer group that built the play structure shown.



Part A Cindy wants to add three more boards evenly spaced between and parallel to the bottom and top boards of the triangular frame. Based on the lengths of the top and bottom boards shown, what will be the lengths of each of the three additional boards? Explain.

Part B How can Cindy determine where along to nail the new boards into the existing frame?

Part C What other measurements should Cindy find to be certain that the boards will fit exactly onto the triangular frame?