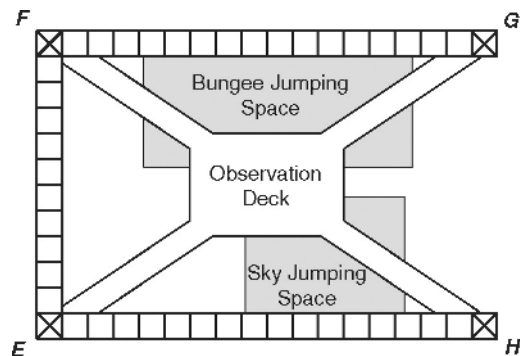


LESSON
7-4

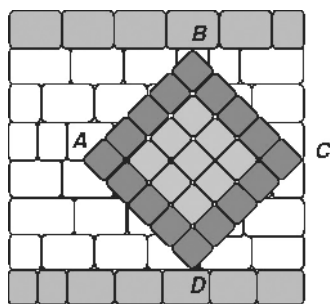
Problem Solving

Conditions for Special Parallelograms

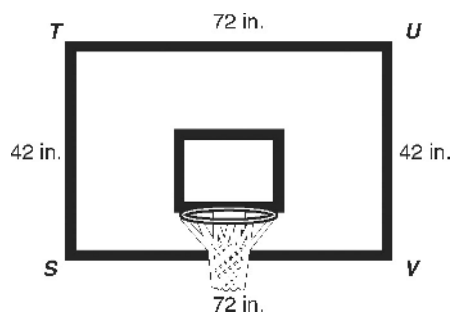
1. An amusement park has a rectangular observation deck with walkways above the bungee jumping and sky jumping. The distance from the center of the deck to points E , F , G , and H is 15 meters. Explain why $EFGH$ must be a rectangle.



2. In the mosaic, $\overline{AB} \parallel \overline{CD}$ and $\overline{BC} \parallel \overline{DA}$. If $AB = 4$ inches and $BC = 4$ inches, can you conclude that $ABCD$ is a square? Explain.



3. If $\overline{TV} \cong \overline{US}$, explain why the basketball backboard must be a rectangle.

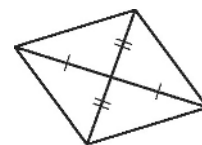


Choose the best answer.

4. The vertices of a parallelogram are $N(0, -4)$, $P(6, -1)$, $Q(4, 3)$, and $R(-2, 0)$. Classify the parallelogram as specifically as possible.
- A rectangle only
 B square
 C rhombus only
 D quadrilateral
6. In parallelogram $KLMN$, $m\angle L = (4w + 5)^\circ$. Choose the value of w that makes $KLMN$ a rectangle.

- A 90 C 43.75
 B 85 D 21.25

5. Choose the best description for the quadrilateral.



- F parallelogram
 G parallelogram and rectangle
 H parallelogram and rhombus
 J parallelogram and square

7. The coordinates of three vertices of quadrilateral $ABCD$ are $A(3, -1)$, $B(10, 0)$, and $C(5, 5)$. For which coordinates of D will the quadrilateral be a rhombus?

- F $(-1, 4)$ H $(-1, 3)$
 G $(-2, 4)$ J $(-2, 3)$

