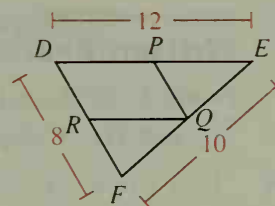


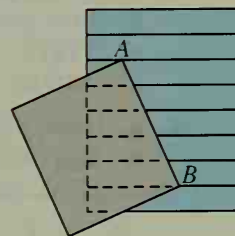
- Example** P , Q , and R are midpoints of the sides of $\triangle DEF$.
- What kind of figure is $DPQR$?
 - What is the perimeter of $DPQR$?



- Solution**
- Since $\overline{RQ} \parallel \overline{DE}$ and $\overline{PQ} \parallel \overline{DF}$, quad. $DPQR$ is a parallelogram.
 - $RQ = \frac{1}{2}DE = DP = 6$ and $PQ = \frac{1}{2}DF = DR = 4$.
Thus the perimeter of $DPQR$ is $6 + 4 + 6 + 4$, or 20.

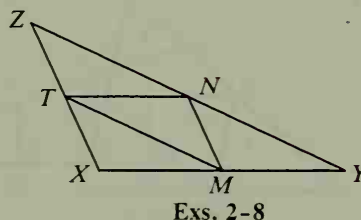
Classroom Exercises

- You can use a sheet of lined notebook paper to divide a segment into a number of congruent parts. Here a piece of cardboard with edge \overline{AB} is placed so that \overline{AB} is separated into five congruent parts. Explain why this works.



M , N , and T are the midpoints of the sides of $\triangle XYZ$.

- If $XZ = 10$, then $MN = \underline{\quad? \quad}$.
- If $TN = 7$, then $XY = \underline{\quad? \quad}$.
- If $ZN = 8$, then $TM = \underline{\quad? \quad}$.
- If $XY = k$, then $TN = \underline{\quad? \quad}$.
- Suppose $XY = 10$, $YZ = 14$, and $XZ = 8$.
What are the lengths of the three sides of
 - $\triangle TNZ$?
 - $\triangle MYN$?
 - $\triangle XMT$?
 - $\triangle NTM$?



- State a theorem suggested by Exercise 6.
- How many parallelograms are in the diagram?
- What result of this section do the railings suggest?

