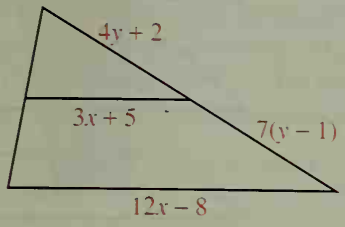
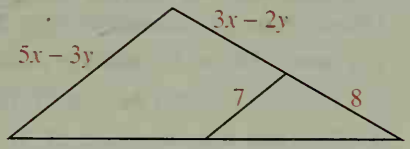
In Exercises 16–17 a segment joins the midpoints of two sides of a triangle. Find the values of x and y.

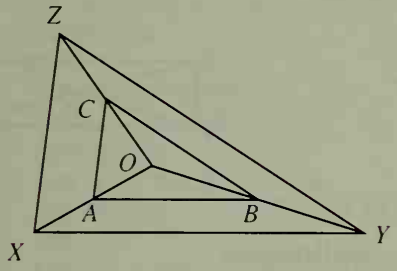
16.



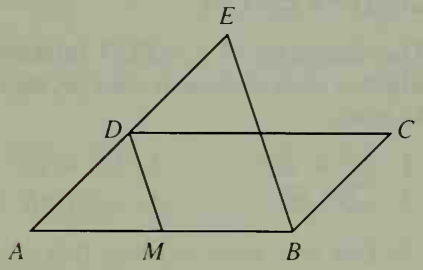
17.



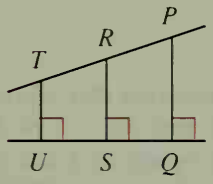
18. Given: A is the midpoint of $\overline{OX}$; $\overline{AB} \parallel \overline{XY}$; $\overline{BC} \parallel \overline{YZ}$
Prove: $\overline{AC} \parallel \overline{XZ}$



19. Given: $\square ABCD$; $\overline{BE} \parallel \overline{MD}$; M is the midpoint of $\overline{AB}$.
Prove: $DE = BC$

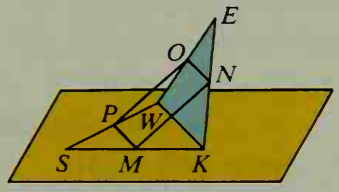


20. Given: $\overline{PQ}$, $\overline{RS}$, and $\overline{TU}$ are each perpendicular to $\overline{UQ}$; R is the midpoint of $\overline{PT}$.
Prove: R is equidistant from U and Q.



21. $EFGH$ is a parallelogram whose diagonals intersect at P. M is the midpoint of $\overline{FG}$. Prove that $MP = \frac{1}{2}EF$.

22. A *skew quadrilateral* $SKEW$ is shown. M, N, O, and P are the midpoints of $\overline{SK}$, $\overline{KE}$, $\overline{WE}$, and $\overline{SW}$. Explain why $PMNO$ is a parallelogram.



23. Draw $\triangle ABC$ and label the midpoints of $\overline{AB}$, $\overline{AC}$, and $\overline{BC}$ as X, Y, and Z, respectively. Let P be the midpoint of $\overline{BZ}$ and Q be the midpoint of $\overline{CZ}$. Prove that $PX = QY$.

24. Draw $\triangle ABC$ and let D be the midpoint of $\overline{AB}$. Let E be the midpoint of $\overline{CD}$. Let F be the intersection of $\overrightarrow{AE}$ and $\overline{BC}$. Draw $\overline{DG}$ parallel to $\overline{EF}$ meeting $\overline{BC}$ at G. Prove that $BG = GF = FC$.