Name_____  Date_____

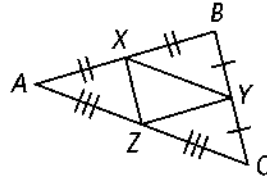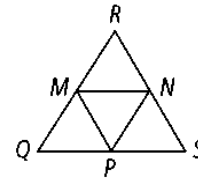# 5.1 –Midsegments of Triangles

Name the segment that is parallel to the given segment.

1)  $\overline{AB}$

2)  $\overline{XY}$

3)  $\overline{CB}$
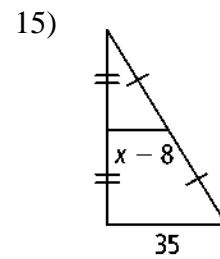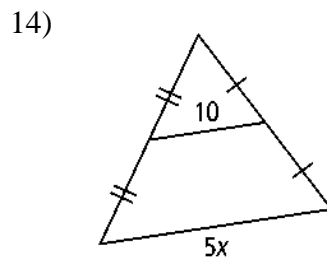
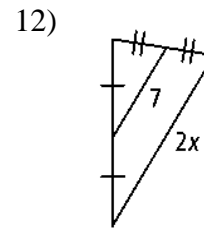Points *M, N,* and *P* are the midpoints of the sides of $\triangle QRS$. $QR = 30$, $RS = 30$, and $SQ = 18$.

4) Find *MN*.                    5) Find *MQ*.

6) Find *MP*.                    7) Find *PS*.

8) Find *PN*.                    9) Find *RN*.

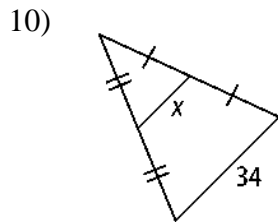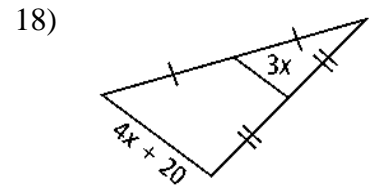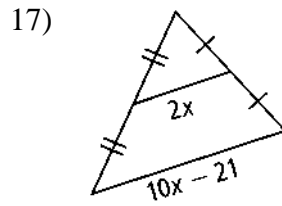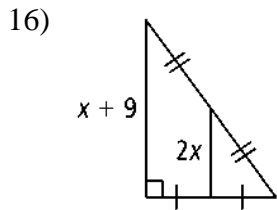Find the value of *x*.

10)                              11)                              12)

13)                              14)                              15)

16)



$x + 9$

$2x$
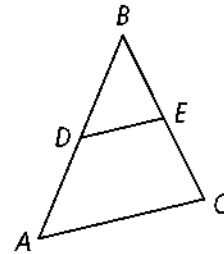
17)



$2x$

$10x - 21$

18)



$3x$

$4x + 20$
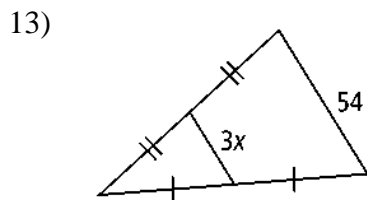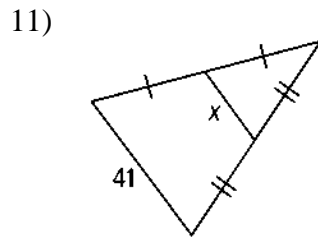
*D* is the midpoint of $\overline{AB}$. *E* is the midpoint of $\overline{CB}$.
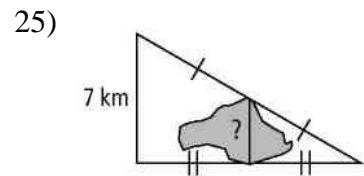
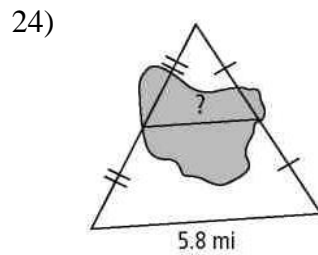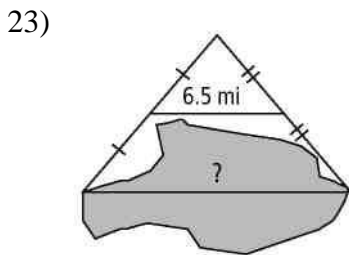19) If $m\angle A = 70$, find $m\angle BDE$.

20) If $m\angle BED = 73$, find $m\angle C$.
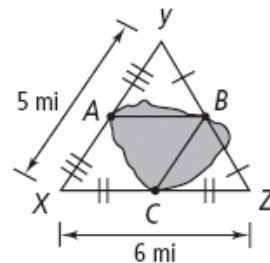
21) If $DE = 23$, find $AC$.

22) If $AC = 83$, find $DE$.



Find the distance across the lake in each diagram.

23)



6.5 mi

?

24)



?

5.8 mi

25)



7 km

?

Use the diagram at the right.

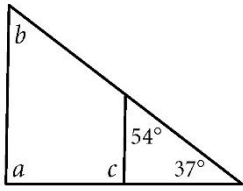26) Which segment is shorter for kayaking across the lake, $\overline{AB}$ or $\overline{BC}$? Explain.

27) Which distance is shorter, kayaking from *A* to *B* to *C,* or walking from *A* to *X* to *C?* Explain.
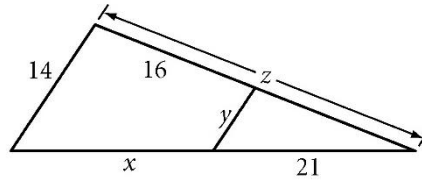


5 mi

6 mi

Find the missing variables.  Note that the segment in middle of the triangle is the midsegment.

28)   $a =$_____ , $b =$_____ , $c =$_____
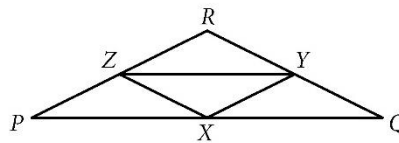


29)   $x =$_____ , $y =$_____ , $z =$_____



Complete the following.

30)   $x$, $y$, and $z$ are midpoints. Perimeter $\triangle PQR = 132$, $RQ = 55$, and $PZ = 20$.

Perimeter $\triangle XYZ =$ _____

$PQ =$ _____

$ZX =$ _____



31)   $\overline{MN}$ is the midsegment. Find the coordinates of $M$ and $N$. Find the slopes of $\overline{AB}$ and $\overline{MN}$.