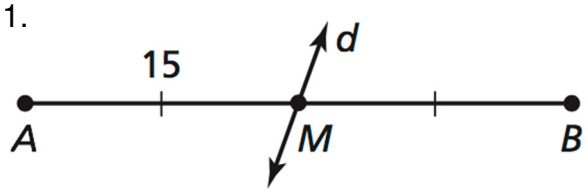
Name:_____ Date:_____ Period:_____

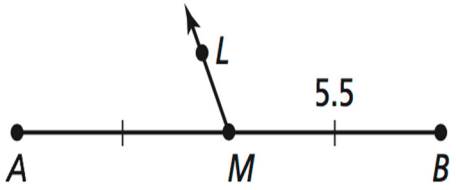
1.3 Using Midpoint Formulas

In Exercises 1 & 2, identify the segment bisector of $\overline{AB}$. Then find *AB*.

1.

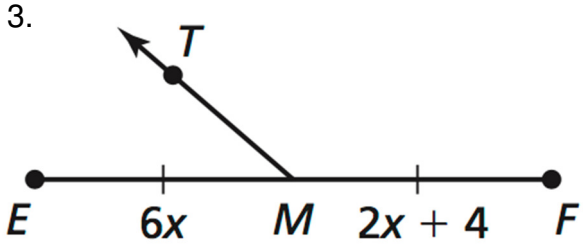


2.

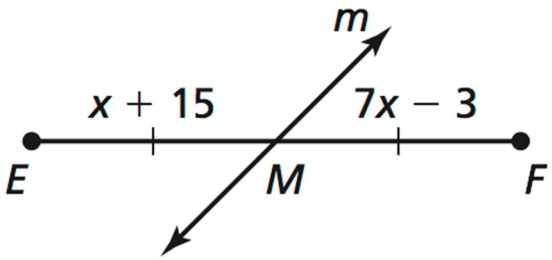


In Exercises 3-5, identify the segment bisector of $\overline{EF}$. Then find *EF.*

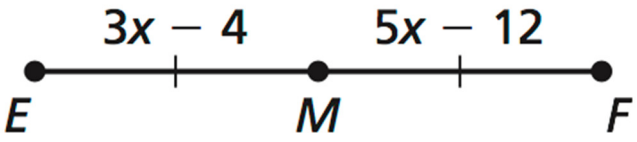
3.



4.

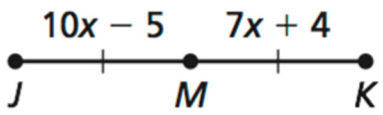
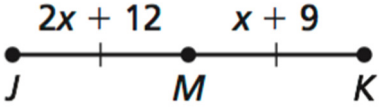
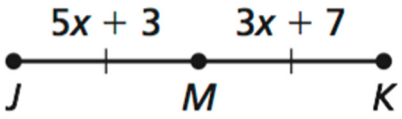
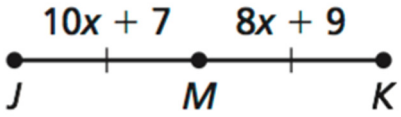


5.



Name:_____ Date:_____ Period:_____

In Exercises 6-9, point *M* is the midpoint of $\overline{JK}$. Find the length of $\overline{JK}$.

6. 	7. 
8. 	9. 

In Exercises 10-13, the endpoints of $\overline{AB}$ are given. Find the coordinates of the point *P* that partitions the segment in the given ratio.

10. 6 and 16; 4:1	11. -9 and 6; 1:4
12. -4 and 12; 3:1	13. -6 and 15; 1:5

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In Exercises 14-17, the endpoints of the diameter of a circle are given, find the coordinates of the center of the circle.

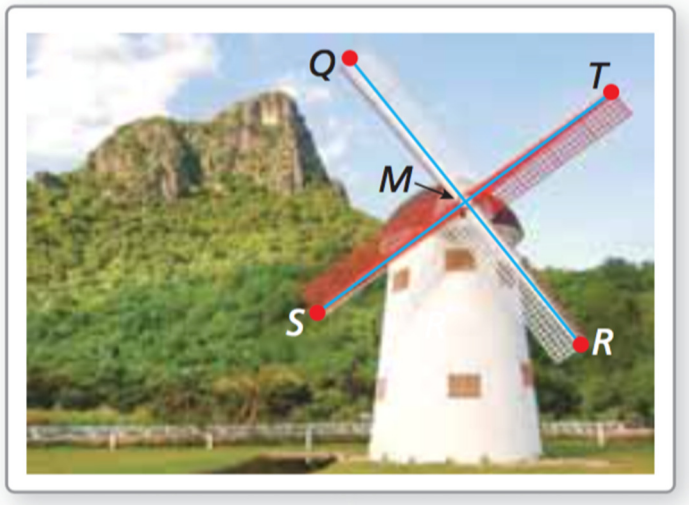
14. (3, -5) and (7, 9)	15. (-4, 7) and (0, -3)
16. (-2, 0) and (4, 9)	17. (-8, -6) and (-4, 10)

In Exercises18-2, the midpoint *M* and one endpoint of $\overline{GH}$ are given. Find the coordinates of the other endpoint.

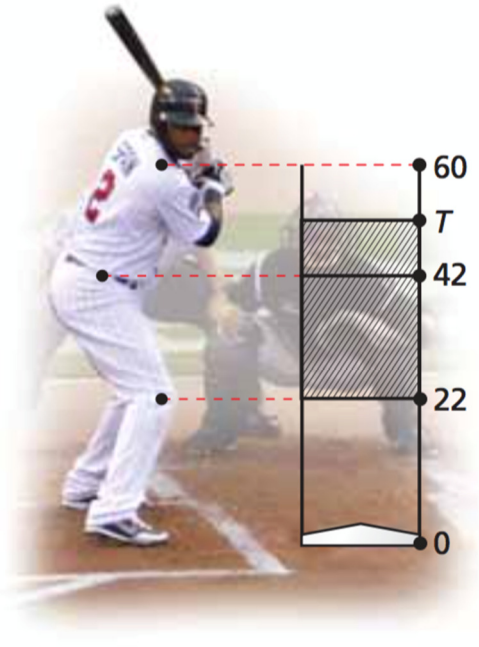
18. *G*(5, -6) and *M*(4, 3)	19. *H*(-3, 7) and *M*(-2, 5)
20. *H*(-2, 9) and *M*(8, 0)	21. *G*(-4, 1) and *M*$(-\frac{13}{2}$, -6)

Name:_____ Date:_____ Period:_____

22. In the photograpgh of a windmill, $\overline{ST}$ bisects $\overline{QR}$ at point *M.* The length of $\overline{QM}$ is $18\frac{1}{2}$ feet. Find *QR* and *MR.*

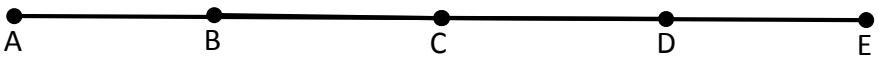


23. In baseball, the strike zone is the region a baseball needs to pass through for the umpire to declare it a strike when the batter does not swing. The top of the strike zone is a horizontal plane passing through the midpoint of the top of the batter's shoulders and the top of the uniform pants when the player is in a batting stance. Find the height of *T*.



Name:_____ Date:_____ Period:_____

In Exercises 24 – 26, use the diagram. Point C is the midpoint of $\overline{AE}$ and $\overline{BD}$.



24. If $BC = x^2 - 18$ and $CD = x + 2$, find x.

25. if $AC = 2x - 1$ and $AE = x^2 - 2$, find x.

26. If $AB = 2x + 3$ and $DE = x^2$, what are the possible values of x?