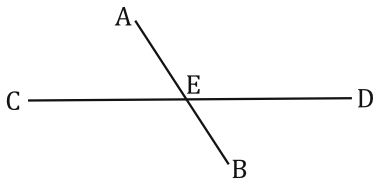
Bisect and Midpoint

Let's cut stuff in half...

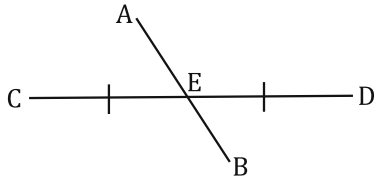
Bisect and midpoint are very closely related. They are also really important for being able to solve problems later in Geometry. Let's look at bisect.

Bisect: Bi means "two" and Sect means "like sections." So, we get "two sections." What this really means in Geometry is to cut something exactly in half so that both halves are exactly the same. Look at this...



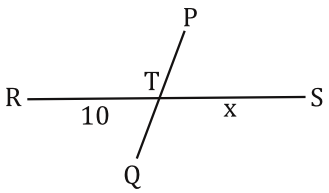
$\overline{AB}$ bisects $\overline{CD}$

This means....



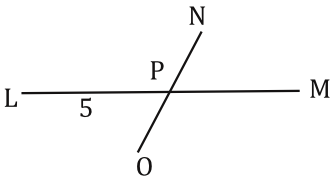
CE=ED

Ex. 1. $\overline{PQ}$ bisects $\overline{RS}$. Find x.



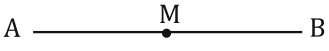
RT=TS Bisect
10=x

Ex. 2. $\overline{LM}$ bisects $\overline{NO}$. Find LM.



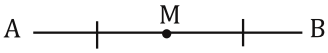
LP=PM Bisect
5=PM
so LM=10

Midpoint is a point that is directly in the middle and bisects a segment. So just like bisect, the midpoint cuts this in half. Have a look...



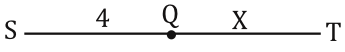
M is the midpoint of $\overline{AB}$.

That means...



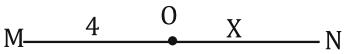
AM=MB

Ex 3. Q is the midpoint of $\overline{ST}$. Find QT.



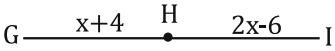
SQ=QT Midpoint
4=x

Ex. 4. O is the midpoint of $\overline{MN}$. Find MN.



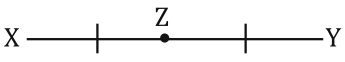
MO=ON Midpoint
9=ON
9+9=18

Ex. 5. H is the midpoint of $\overline{GI}$. Solve for x.



GH=HI Midpoint
x+4=2x-6
−x −x
4=x-6
+6 +6
10=x

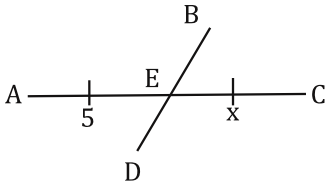
Ex. 6. True or False: Z is the midpoint of $\overline{XY}$.



True XZ=ZY so Z is the midpoint

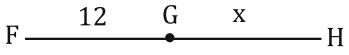
Mark each figure then solve the problem. Bubble ONLY the right answers below. I did the first one for you.

1. $\overline{BD}$ bisects $\overline{AC}$. Find EC.

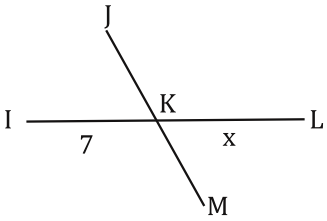


AE=CE Bisect
5=x

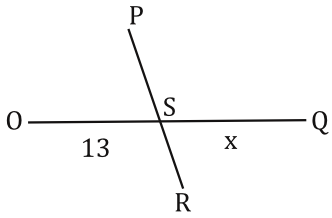
2. G is the midpoint of $\overline{FH}$. Find GH.



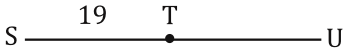
3. $\overline{JM}$ bisects $\overline{IL}$. Find KL.



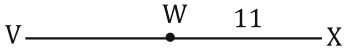
4. $\overline{PR}$ bisects $\overline{OQ}$. Find SQ.



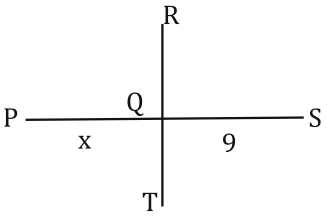
5. T is the midpoint of $\overline{SU}$. Find SU.



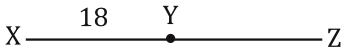
6. W is the midpoint of $\overline{VX}$. Find VX.



7. $\overline{RT}$ bisects $\overline{PS}$. Find PQ.



8. Y is the midpoint of $\overline{XZ}$. Find XZ.

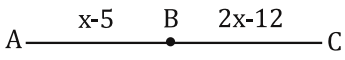


Bubble all the correct answers from above. Don't bubble incorrect answers.

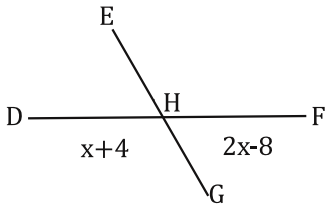
○5 ○13 ○18 ○36 ○9 ○34 ○7 ○9 ○38 ○14 ○22 ○12 ○33 ○14

Calculate the perimeter of each figure...

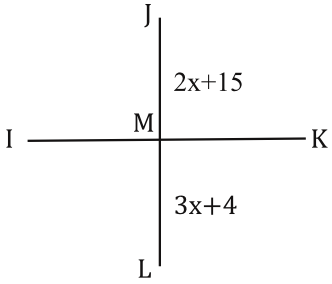
9. B is the midpoint of $\overline{AC}$. Solve for x.



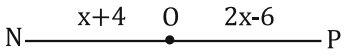
10. $\overline{EG}$ bisects $\overline{DF}$. Solve for x.



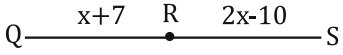
11. $\overline{JL}$ bisects $\overline{IK}$. Solve for x.



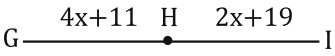
12. O is the midpoint of $\overline{NP}$. Solve for x.



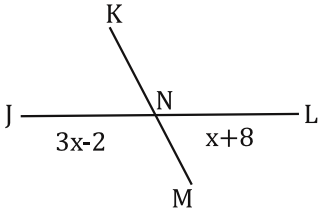
13. R is the midpoint of QS. Solve for x.



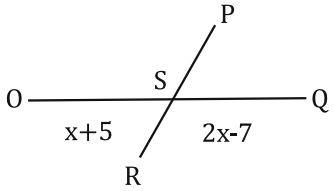
14. H is the midpoint of $\overline{GI}$. Solve for x.



15. $\overline{KM}$ bisects $\overline{JL}$. Solve for x.



16. $\overline{PR}$ bisects $\overline{OQ}$. Solve for x.



Bubble all the correct answers from above. Don't bubble incorrect answers.

○3 ○6 ○11 ○15 ○5 ○12 ○6 ○9 ○8 ○12 ○10 ○4 ○18 ○17