

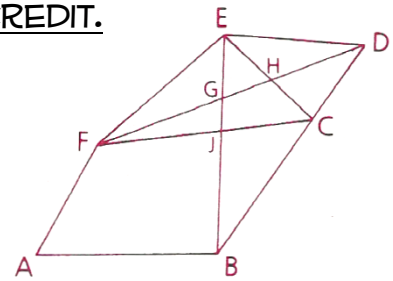
**1.REV.1 – LESSONS 1.1 – 1.3**

ALL WORK MUST BE SHOWN TO RECEIVE CREDIT.

1. Use the diagram shown:

- a.  $\overline{BC} \cap \overline{CD}$
- b.  $\overline{BG} \cap \overline{EJ}$
- c.  $\overline{AF} \cup \overline{AB}$

- d.  $\overrightarrow{BC} \cap \overrightarrow{ED}$
- e.  $\overline{BC} \cap \overline{ED}$



2. Name two segments in the figure with endpoint A.

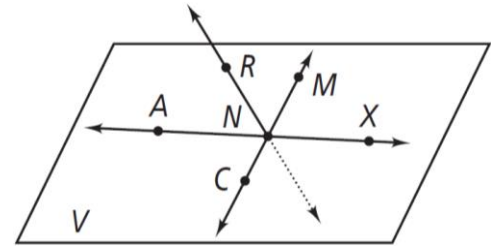
3.  $\overline{CM} \cap \overline{RN}$

4. Name three collinear points.

5. Are points R, N, M, and X coplanar?

6. Name two rays shown in the figure with endpoint M.

7. Name a pair of opposite rays.

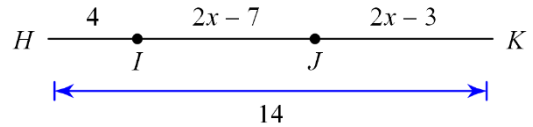


Problems 2 – 7

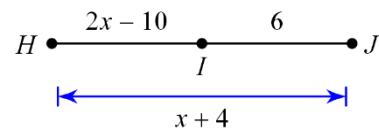
8. Given:  $AB = 2r + 7$ ,  $CD = 3r - 1$ ,  $BC = 6$ , and C is the midpoint of  $\overline{AD}$ . Find AC.



9. Use the Segment Addition Postulate to set up and solve an equation to find the value of x. Then find JK.



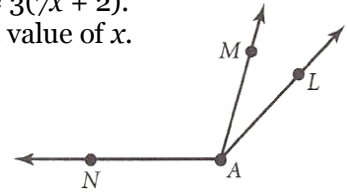
10. Is I the midpoint of  $\overline{HJ}$ ? Explain your reasoning.



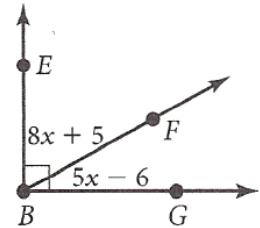
11. Points R, S, and T are collinear. S is between R and T. If  $RS = 3x^2$ ,  $ST = -2x^2 + 45$ , and  $RT = 18x$ , what is the value of x? Then find RS, RT, and ST.

12. The measure of two angles are in the ratio 5:3. The measure of the larger angle is 30 greater than half the difference of the angles. Find the measure of each angle.

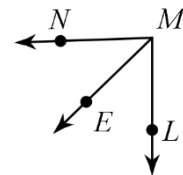
13. In the figure shown,  $m\angle MAN = 17x + 3$ ,  $m\angle MAL = 9(x - 3)$ , and  $m\angle NAL = 3(7x + 2)$ . Use the Angle Addition Postulate to set up and solve an equation to find the value of  $x$ . Then find  $m\angle MAN$ ,  $m\angle MAL$ , and  $m\angle NAL$ .



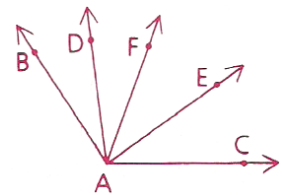
14. Given:  $\angle EBG$  is a right angle. Use the Angle Addition Postulate to set up and solve an equation to find the value of  $x$  and then find the measure of the larger angle.



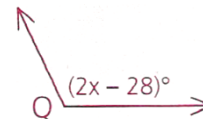
15. Given:  $m\angle LME = 8x - 2$ ,  $m\angle EMN = 7x$ , and  $m\angle LMN = 88^\circ$ . Has  $\angle LMN$  been bisected? Explain your reasoning.



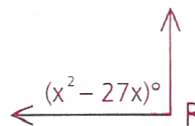
16. Given:  $m\angle BAC = 120^\circ$ , and points  $D$ ,  $E$ , and  $F$  are in the interior of  $\angle BAC$  as shown.  $\overrightarrow{AD}$  bisects  $\angle BAF$  and  $\overrightarrow{AE}$  bisects  $\angle CAF$ . Find  $m\angle DAE$ . Explain how you arrived at this answer.



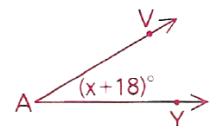
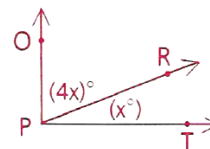
17. Given:  $\angle Q$  is an obtuse angle. What are the restrictions on  $x$ ?



18. Given:  $\angle R$  is a right angle. Find the value of  $x$ .



19. Given:  $m\angle OPT = 90^\circ$ . Show that  $m\angle VAY$  is twice that of  $\angle RPT$ .



20. Extra Credit: Given:  $\overrightarrow{OP}$  and  $\overrightarrow{OR}$  trisect  $\angle NOS$ ;  $m\angle NOP = 3x - 4y$ ,  $m\angle POR = x - y$ , and  $m\angle ROS = y - 10$ . Use the Angle Addition Postulate to set up and solve a system of equations to find the values of  $x$  and  $y$ . Then find  $m\angle NOP$  and  $m\angle NOS$ . Show all work on a separate sheet of paper.

