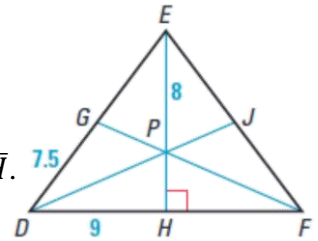


**5-3 Worksheet**

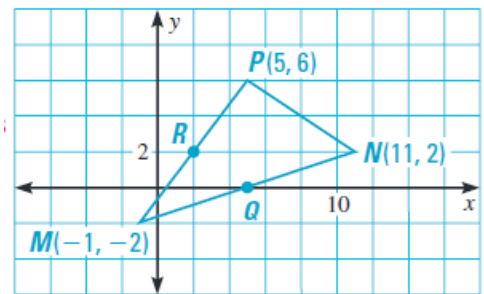
Use the figure to the right and the given information for problems 1-4.

$P$  is the centroid of  $\triangle DEF$ ,  $\overline{EH} \perp \overline{DF}$ ,  
 $DH = 9$ ,  $DG = 7.5$ ,  $EP = 8$ , and  $DE = FE$



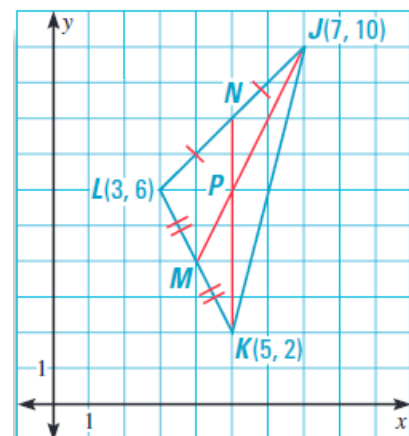
1. Find the length of  $\overline{FH}$ .
2. Find the length of  $\overline{EH}$ .
3. Find the length of  $\overline{PH}$ .
4. Find the perimeter of  $\triangle DEF$ .

Use the graph to the right for problems 5-8.



5. Find the coordinates of  $Q$ , the midpoint of  $\overline{MN}$ .
6. Find the length of the median  $\overline{PQ}$ .
7. Find the coordinates of the centroid. Label this point as  $T$ .
8. Find the coordinates of  $R$ , the midpoint of  $\overline{MP}$ . Show that the quotient  $\frac{NT}{NR} = \frac{2}{3}$ .

Use the graph to the right for problems 9-11.



9. Find the coordinates of  $M$ .
10. Find the lengths of  $\overline{JP}$  and  $\overline{JM}$  using the Distance Formula.
11. Verify that  $JP = \frac{2}{3}JM$ .