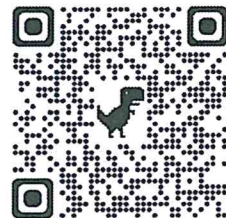


Name Schlansky  
Mr. Schlansky

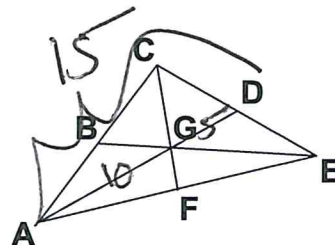
Date \_\_\_\_\_  
Geometry



## Intersecting Medians (Centroid Problems)

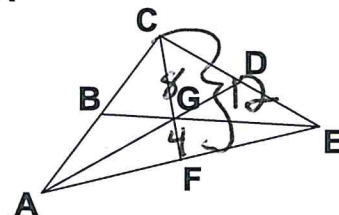
1. In the given triangle, all three medians are drawn in. If  $\overline{AG} = 10$ , find

- a)  $\overline{GD}$  5  
b)  $\overline{AD}$  15



2. In the given triangle, all three medians are drawn in. If  $\overline{FG} = 4$ , find

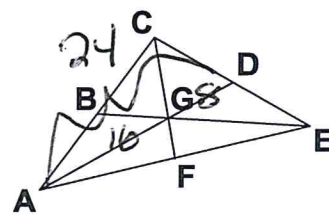
- a)  $\overline{CG}$  8  
b)  $\overline{CF}$  12



3. In the given triangle, all three medians are drawn in. If  $\overline{AD} = 24$ , find

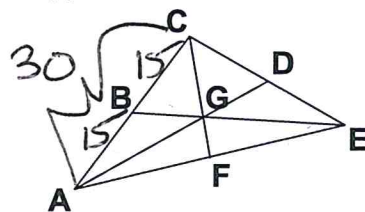
- a)  $\overline{AG}$  16  
b)  $\overline{DG}$  8

$$\begin{aligned} 2x + x &= 24 \\ \frac{3x}{3} &= \frac{24}{3} \\ x &= 8 \end{aligned}$$



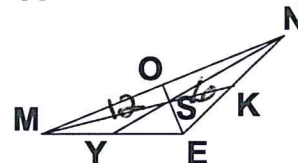
4. In the given triangle, all three medians are drawn in. If  $\overline{AC} = 30$ , find

- a)  $\overline{AB}$  15  
b)  $\overline{BC}$  15



5. In the given triangle, all three medians are drawn in. If  $\overline{MS} = 12$ , find

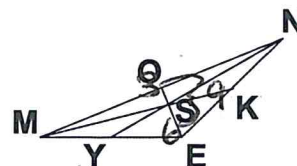
- a)  $\overline{SK}$  6  
b)  $\overline{MK}$  18



6. In the given triangle, all three medians are drawn in. If  $\overline{OE} = 9$ , find

- a)  $\overline{OS}$  3  
b)  $\overline{SE}$  6

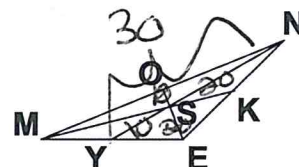
$$\begin{aligned} 2x + x &= 9 \\ \frac{3x}{3} &= \frac{9}{3} \\ x &= 3 \end{aligned}$$



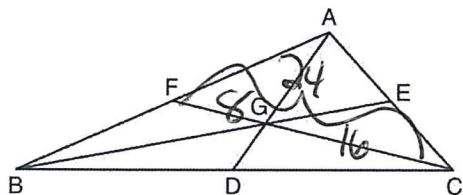
7. In the given triangle, all three medians are drawn in. If  $\overline{YN} = 30$ , find

- a)  $\overline{YS}$  10  
b)  $\overline{SN}$  20

$$\begin{aligned} 2x + x &= 30 \\ \frac{3x}{3} &= \frac{30}{3} \\ x &= 10 \end{aligned}$$



8. In the diagram below of  $\triangle ABC$ , medians  $\overline{AD}$ ,  $\overline{BE}$ , and  $\overline{CF}$  intersect at  $G$ . If  $CF = 24$ , what is the length of  $\overline{FG}$ ?



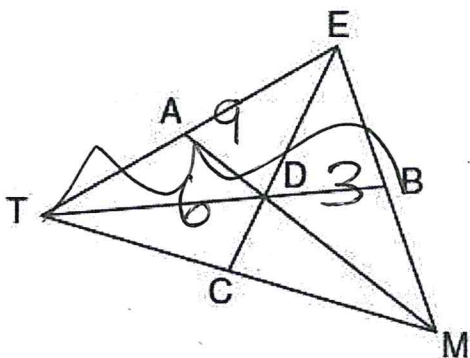
$$2x + 1x = 24$$

$$\frac{3x = 24}{3 \quad 3}$$

$$x = 8$$

$$\overline{FG} = 8$$

9. In the diagram below of  $\triangle TEM$ , medians  $\overline{TB}$ ,  $\overline{EC}$ , and  $\overline{MA}$  intersect at  $D$ , and  $TB = 9$ . Find the length of  $\overline{TD}$ .



$$2x + 1x = 9$$

$$\frac{3x = 9}{3 \quad 3}$$

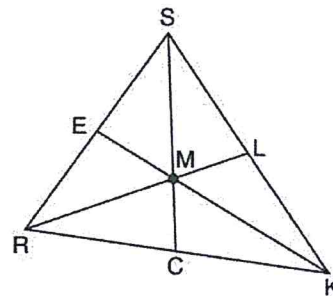
$$x = 3$$

$$\overline{TD} = 6$$

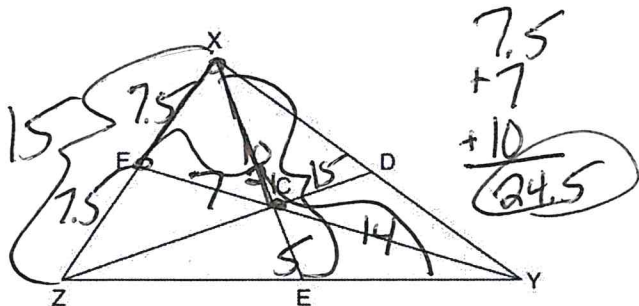
10. In triangle  $SRK$  below, medians  $\overline{SC}$ ,  $\overline{KE}$ , and  $\overline{RL}$  intersect at  $M$ .

Which statement must always be true?

- 1)  $3(MC) = SC$  ✓
- 2)  $MC = \frac{1}{3}(SM)$  ✗
- 3)  $RM = 2MC$  ✗
- 4)  $SM = KM$  ✗



11. In  $\triangle XYZ$ , shown below, medians  $\overline{XE}$ ,  $\overline{YF}$ , and  $\overline{ZD}$  intersect at  $C$ . If  $CE = 5$ ,  $YF = 21$ , and  $XZ = 15$ , determine and state the perimeter of triangle  $CFX$ .



$$7.5$$

$$+ 7$$

$$+ 10$$

$$\hline 24.5$$

$$2x + 1x = 21$$

$$\frac{3x = 21}{3 \quad 3}$$

$$x = 7$$