

Name: Key

Class: \_\_\_\_\_

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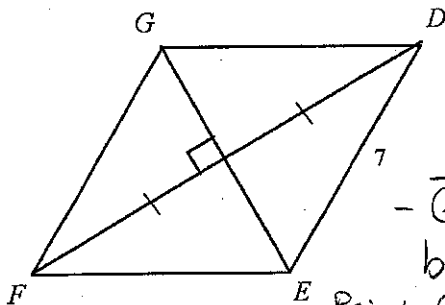
Honors Integrated Math 2

Chapter 4 Test REVIEW

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. The length of  $\overline{DE}$  is shown. What other length can you determine for this diagram?



-  $\overline{GE}$  is a  $\perp$  bisector.

- Point E is on  $\overline{GE}$ .

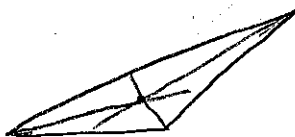
- A point on  $\perp$  bisector is equidistant to endpoints of segment it bisects.

- A.  $DG=7$   
 B.  $DF=14$   
 C.  $EF=7$   
 D. No other length can be determined.

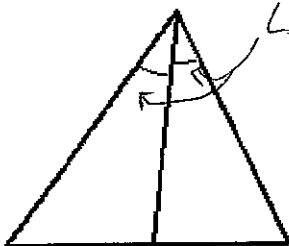
2. Where can the bisectors of the angles of an obtuse triangle intersect?

- I. inside the triangle  
 II. on the triangle  
 III. outside the triangle

- A. III only  
 B. I, II, or III  
 C. I or III only  
 D. I only

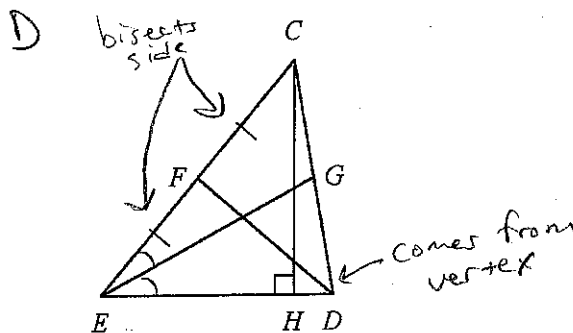


3. What is the name of the segment inside the large triangle?



- A. angle bisector  
 B. median  
 C. midsegment  
 D. perpendicular bisector

4. Name a median for  $\triangle CDE$ .



- A.  $\overline{EG}$   
 B.  $\overline{CF}$   
 C.  $\overline{CH}$   
 D.  $\overline{DF}$

5. In  $\triangle ACE$ , G is the centroid and  $BE=15$ . Find BG and GE.

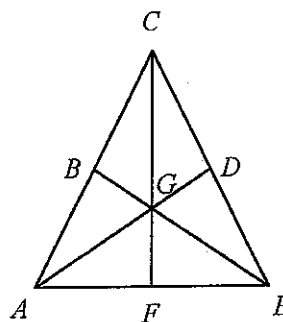
B

$$GE = \frac{2}{3}(BE)$$

$$GE = \frac{2}{3}(15) = 10$$

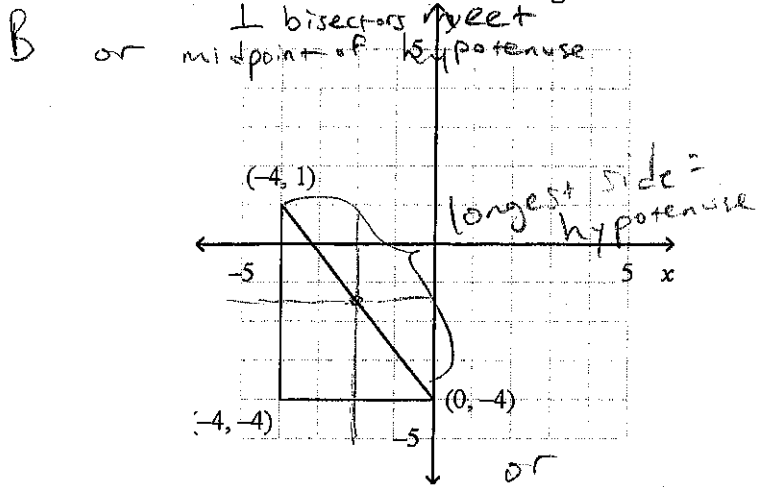
$$BG = \frac{1}{3}(BE)$$

$$BG = \frac{1}{3}(15) = 5$$



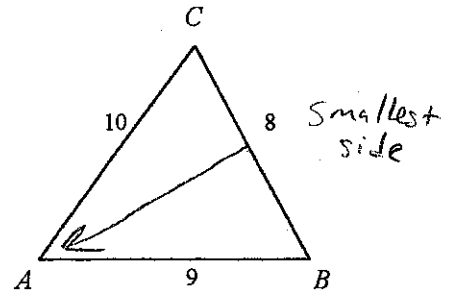
- A.  $BG = 10, GE = 5$   
 B.  $BG = 5, GE = 10$   
 C.  $BG = 7\frac{1}{2}, GE = 7\frac{1}{2}$   
 D.  $BG = 3\frac{3}{4}, GE = 11\frac{1}{4}$

6. Find the circumcenter of the triangle.



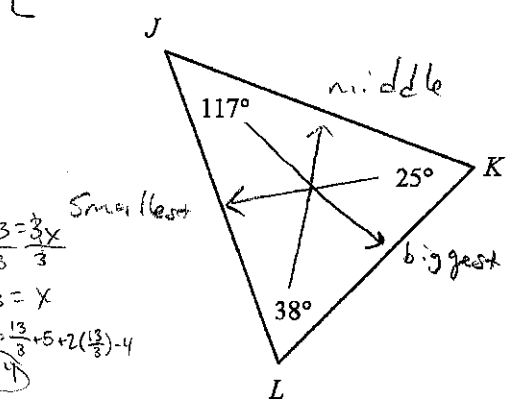
- A. (-2, -4)
- B. (-2, -3/2)**
- C. (-4, -3/2)
- D. (-3/2, -2)

9. Name the smallest angle of  $\triangle ABC$ . The diagram is not to scale.



- A.  $\angle C$
- B.  $\angle A$**
- C.  $\angle B$
- D. Two angles are the same size and smaller than the third.

10. List the sides in order from shortest to longest. The diagram is not to scale.

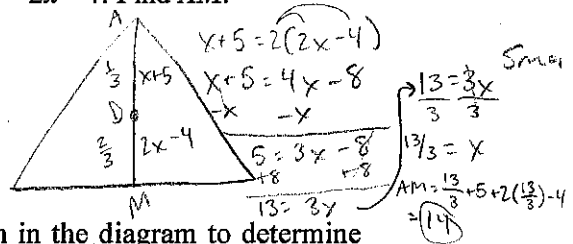


- A.  $\overline{LK}, \overline{JK}, \overline{LJ}$
- B.  $\overline{LJ}, \overline{LK}, \overline{JK}$
- C.  $\overline{LJ}, \overline{JK}, \overline{LK}$**
- D.  $\overline{LK}, \overline{LJ}, \overline{JK}$

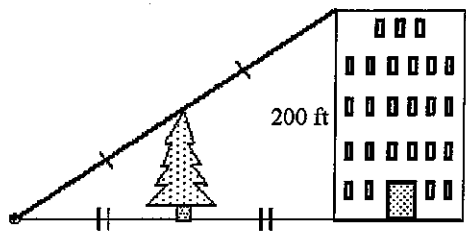
7. In  $\triangle ABC$ , centroid  $D$  is on median  $\overline{AM}$ .

$AD = x + 5$  and  $DM = 2x - 4$ . Find  $AM$ .

- A. 14**
- B. 7
- C. 15
- D.  $\frac{13}{3}$



8. Use the information in the diagram to determine the height of the tree. The diagram is not to scale.



- A. 200 ft
- B. 48 ft
- C. 100 ft**
- D. 50 ft

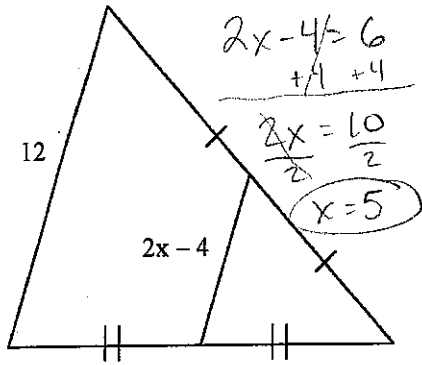
Tree is a midsegment  
 $\hookrightarrow \frac{1}{2}(200) = 100$

11. Which three lengths CANNOT be the lengths of the sides of a triangle?

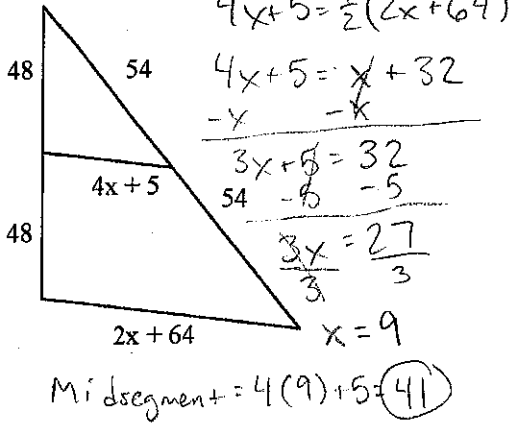
- A. 19 m, 5 m, 10 m**  $10 + 5 \not> 19$
- B. 13 m, 10 m, 14 m
- C. 7 m, 9 m, 13 m
- D. 23 m, 21 m, 13 m

**Gridded Response**

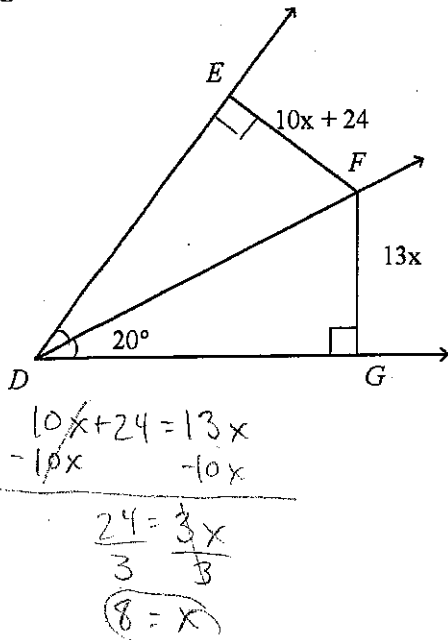
12. Find the value of  $x$ .  $2x-4 = \frac{1}{2}(12)$



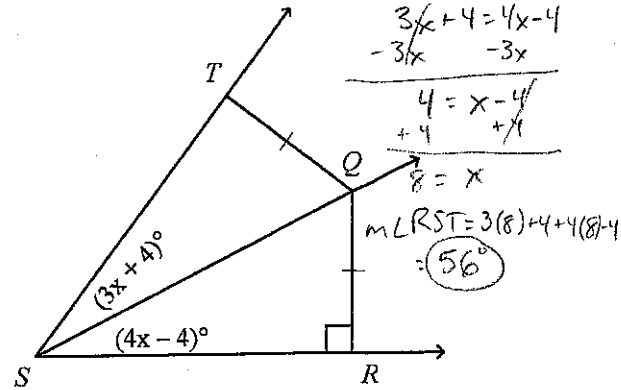
13. Find the length of the midsegment. The diagram is not to scale.



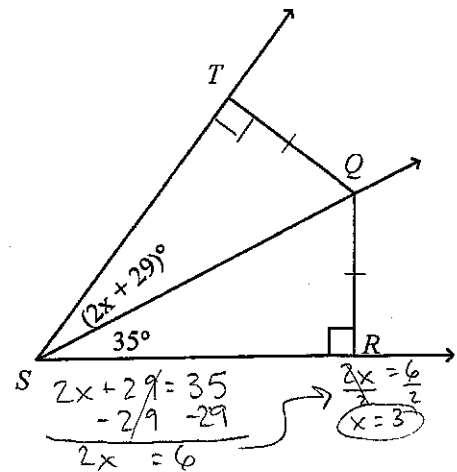
14.  $\overline{DF}$  bisects  $\angle EDG$ . Find the value of  $x$ . The diagram is not to scale.



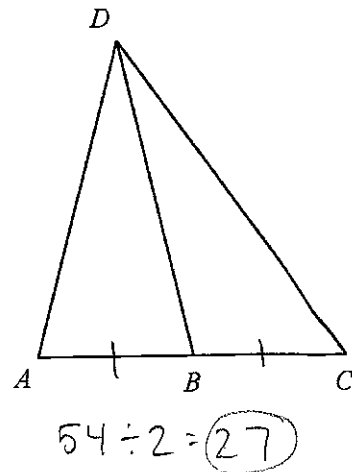
15.  $Q$  is equidistant from the sides of  $\triangle TSR$ . Find  $m\angle RST$ . The diagram is not to scale.



16.  $Q$  is equidistant from the sides of  $\triangle TSR$ . Find the value of  $x$ . The diagram is not to scale.



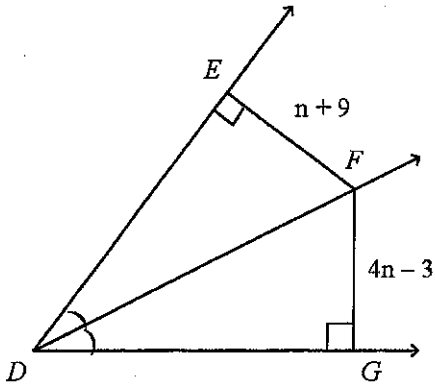
17. Find the length of  $\overline{AB}$ , given that  $\overline{DB}$  is a median of the triangle and  $AC = 54$ .



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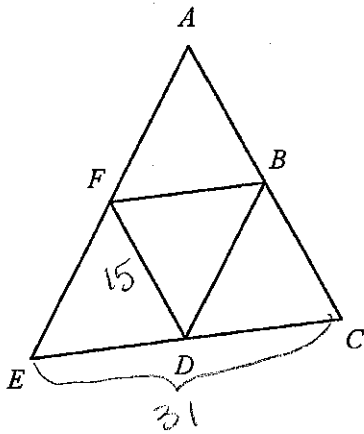
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18.  $\overrightarrow{DF}$  bisects  $\angle EDG$ . Find  $FG$ . The diagram is not to scale.



$$\begin{aligned} n+9 &= 4n-3 \\ +3 & \quad +3 \\ \hline n+12 &= 4n \\ -n & \quad -n \\ \hline 12 &= 3n \\ \frac{12}{3} &= \frac{3n}{3} \\ 4 &= n \\ FG &= 4(4)-3 = 13 \end{aligned}$$

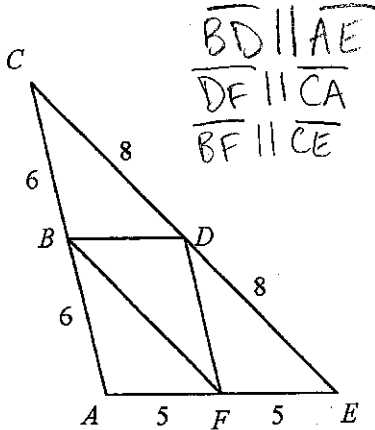
19. Points  $B$ ,  $D$ , and  $F$  are midpoints of the sides of  $\triangle ACE$ .  $EC = 31$  and  $DF = 15$ . Find  $AC$ . The diagram is not to scale.



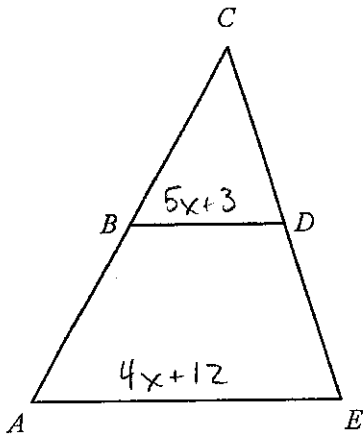
$$AC = 2(15) = 30$$

Short Answer

20. Identify parallel segments in the diagram.



21.  $B$  is the midpoint of  $\overline{AC}$  and  $D$  is the midpoint of  $\overline{CE}$ . Solve for  $x$ , given  $BD = 5x + 3$  and  $AE = 4x + 12$ .



$$5x + 3 = \frac{1}{2}(4x + 12)$$

$$5x + 3 = 2x + 6$$

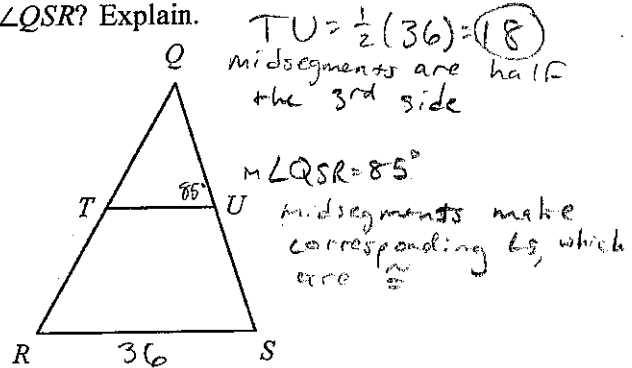
$$\begin{array}{r} -2x \quad -2x \\ \hline 3x + 3 = 6 \\ -3 \quad -3 \\ \hline 3x = 3 \\ \div 3 \quad \div 3 \\ \hline x = 1 \end{array}$$

25. Two sides of a triangle have lengths 6 and 8. What lengths are possible for the third side? Explain.

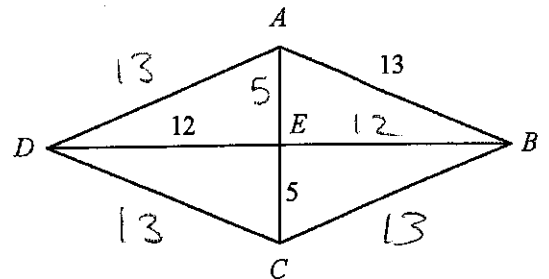
$$\begin{array}{l} 6 + 8 > x \\ 6 + x > 8 \\ 8 + x > 6 \end{array}$$

$14 > x$   
 $x > 2$

22.  $T$  is the midpoint of  $\overline{QR}$ .  $U$  is the midpoint of  $\overline{QS}$ .  $RS = 36$  and  $m\angle QUT = 85$ . What are  $TU$  and  $m\angle QSR$ ? Explain.



23.  $\overline{AC}$  and  $\overline{BD}$  are perpendicular bisectors of each other. Find  $BC$ ,  $AE$ ,  $DB$ , and  $DC$ . Justify your answers.



Def. of  $\perp$  bisectors, see #1

24. In  $\triangle FGH$ , draw median  $\overline{FJ}$  from  $F$  to the side opposite  $F$ .

