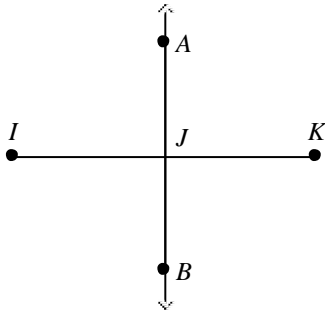


___ 3. Which statement can you conclude is true from the given information?

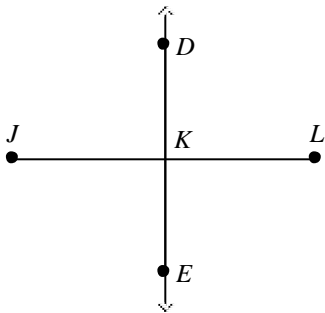
Given: \overleftrightarrow{AB} is the perpendicular bisector of \overline{IK} .



- a. A is the midpoint of \overline{IK} .
- b. $AJ = BJ$
- c. $IJ = JK$
- d. $\angle IAJ$ is a right angle.

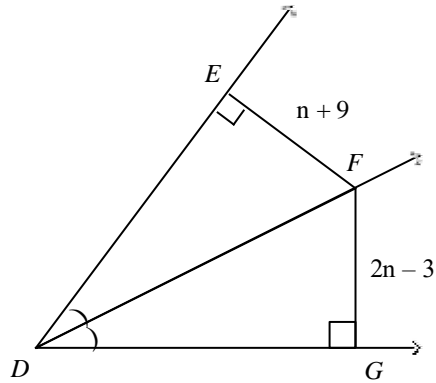
___ 4. Which statement is not necessarily true?

Given: \overleftrightarrow{DE} is the \perp bisector of \overline{JL} .



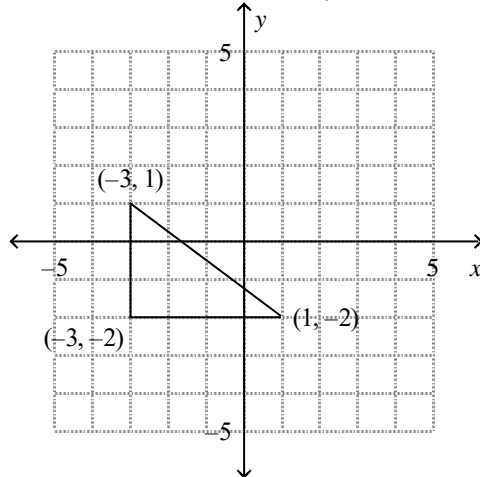
- a. K is the midpoint of \overline{JL} .
- b. $\overline{DE} \perp \overline{JL}$
- c. $DK = KE$
- d. $DJ = DL$

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



- a. 26 b. 21 c. 22 d. 42

6. Find the center of the circle that you can circumscribe about the triangle.



- a. $(-1, -2)$ b. $(-\frac{1}{2}, -1)$ c. $(-3, -\frac{1}{2})$ d. $(-1, -\frac{1}{2})$

7. Find the center of the circle that you can circumscribe about $\triangle EFG$ with $E(6, 6)$, $F(6, 2)$, and $G(8, 2)$.

- a. $(4, 7)$ b. $(7, 4)$ c. $(6, 5)$ d. $(5, 2)$

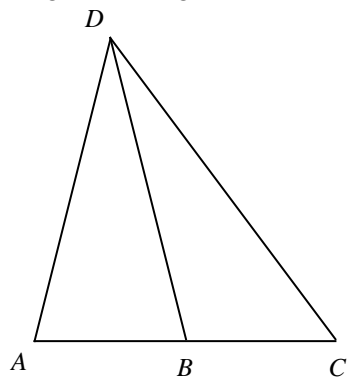
8. Where is the center of the largest circle that you could draw inside a given triangle?

- a. the point of concurrency of the altitudes of the triangle
 b. the point of concurrency of the perpendicular bisectors of the sides of the triangle
 c. the point of concurrency of the bisectors of the angles of the triangle
 d. the point of concurrency of the medians of the triangle

- ___ 9. Where can the perpendicular bisectors of the sides of a right triangle intersect?
 I. inside the triangle
 II. on the triangle
 III. outside the triangle
 a. I only b. II only c. I or II only d. I, II, or II

- ___ 10. 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. I only b. III only c. I or III only d. I, II, or II

- ___ 11. Find the length of \overline{AB} , given that \overline{DB} is a median of the triangle and $AC = 60$.

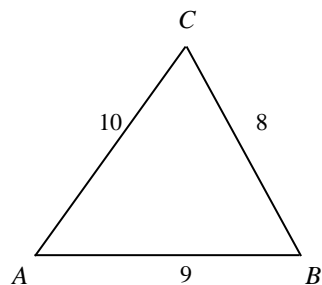


- a. 30 c. 120
 b. 60 d. not enough information

- ___ 12. For a triangle, list the respective names of the points of concurrency of
 • perpendicular bisectors of the sides
 • bisectors of the angles
 • medians
 • lines containing the altitudes.
- | | | | |
|--------------|-----------------|-----------------|--------------|
| a. incenter | b. circumcenter | c. circumcenter | d. incenter |
| circumcenter | incenter | incenter | circumcenter |
| centroid | centroid | orthocenter | orthocenter |
| orthocenter | orthocenter | centroid | centroid |

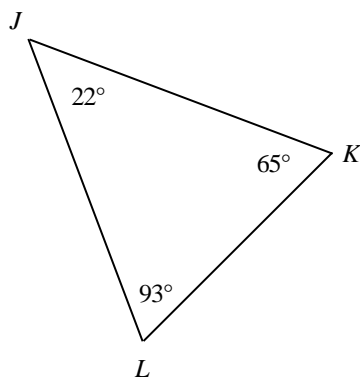
- ___ 13. Where can the medians of a triangle intersect?
 I. inside the triangle
 II. on the triangle
 III. outside the triangle
 a. I only b. III only c. I or III only d. I, II, or II

___ 18. Name the smallest angle of $\triangle ABC$. The diagram is not to scale.



- a. $\angle A$
- b. $\angle B$
- c. $\angle C$
- d. Two angles are the same size and smaller than the third.

___ 19. List the sides in order from shortest to longest. The diagram is not to scale.



- a. $\overline{JK}, \overline{LJ}, \overline{LK}$
- b. $\overline{LK}, \overline{JK}, \overline{LJ}$
- c. $\overline{JK}, \overline{LK}, \overline{LJ}$
- d. $\overline{LK}, \overline{LJ}, \overline{JK}$

___ 20. Which three lengths could be the lengths of the sides of a triangle?

- a. 9 cm, 23 cm, 12 cm
- b. 10 cm, 15 cm, 22 cm
- c. 20 cm, 7 cm, 11 cm
- d. 12 cm, 7 cm, 19 cm

___ 21. Which three lengths can NOT be the lengths of the sides of a triangle?

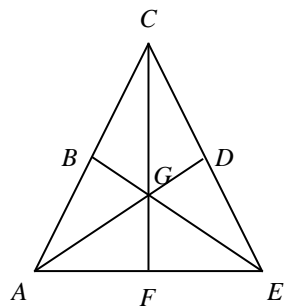
- a. 6 m, 8 m, 6 m
- b. 21 m, 6 m, 11 m
- c. 15 m, 11 m, 14 m
- d. 22 m, 18 m, 12 m

- ___ 22. Two sides of a triangle have lengths 6 and 16. Which inequalities describe the values that possible lengths for the third side?
- a. $x > 6$ and $x < 16$ c. $x \geq 10$ and $x \leq 22$
 b. $x \geq 6$ and $x \leq 16$ d. $x > 10$ and $x < 22$
- ___ 23. Two sides of a triangle have lengths 10 and 17. What must be true about the length of the third side?
- a. less than 27 b. less than 7 c. less than 10 d. less than 17
- ___ 24. Two sides of a triangle have lengths 5 and 18. Which expression describes the length of the third side?
- a. greater than 13 and at most 23 c. at least 13 and at most 23
 b. greater than 13 and less than 23 d. at least 13 and less than 23

- ___ 25. $m\angle A = 11x - 4$, $m\angle B = 4x - 11$, and $m\angle C = 63 - 4x$. List the sides of $\triangle ABC$ in order from shortest to longest.

- a. \overline{AB} , \overline{AC} , \overline{BC} b. \overline{BC} , \overline{AB} , \overline{AC} c. \overline{AC} , \overline{AB} , \overline{BC} d. \overline{AB} , \overline{BC} , \overline{AC}

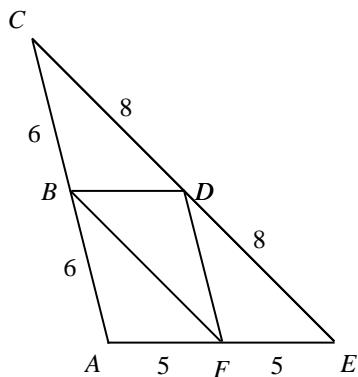
- ___ 26. In $\triangle ABC$, G is the centroid and $BE = 18$. Find BG and GE .



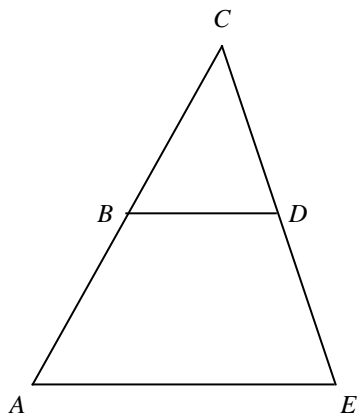
- a. $BG = 9$, $GE = 9$ c. $BG = 4\frac{1}{2}$, $GE = 13\frac{1}{2}$
 b. $BG = 12$, $GE = 6$ d. $BG = 6$, $GE = 12$

Short Answer

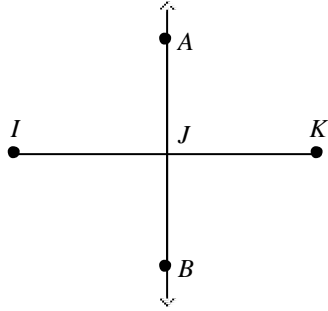
27. Identify parallel segments in the diagram.



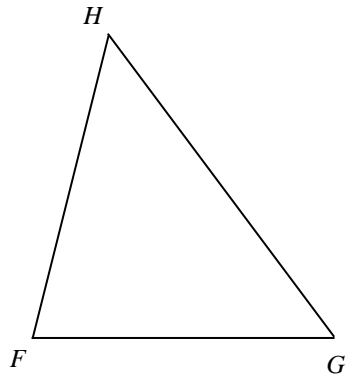
28. B is the midpoint of \overline{AC} and D is the midpoint of \overline{CE} . Solve for x , given $BD = 3x + 3$ and $AE = 5x + 11$.



29. Given: \overleftrightarrow{AB} is the perpendicular bisector of IK . Name two lengths that are equal.



30. In $\triangle FGH$, draw median FJ from F to the side opposite F .

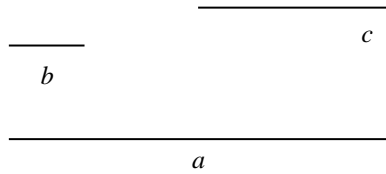


31. Write the contrapositive of this statement:

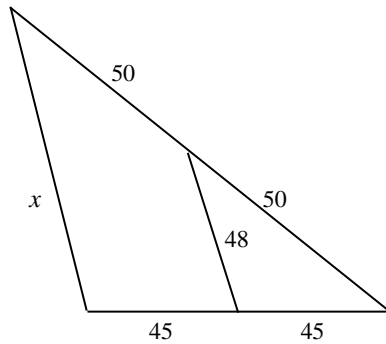
If a figure is a rectangle, then all of its angles are right angles.

32. Given points $A(2, 3)$ and $B(-2, 5)$, explain how you could use the Distance Formula and an indirect argument to show that point $C(0, 3)$ is NOT the midpoint of \overline{AE} .

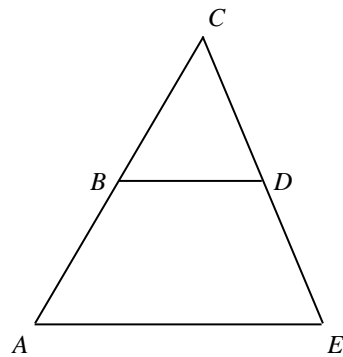
33. Can these three segments form the sides of a triangle? Explain.



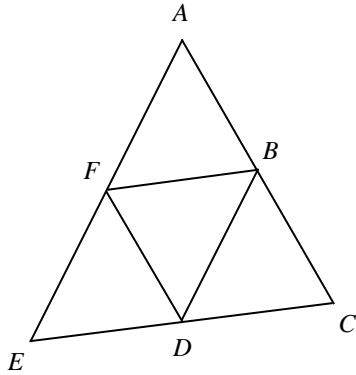
34. Find the value of x . The diagram is not to scale.



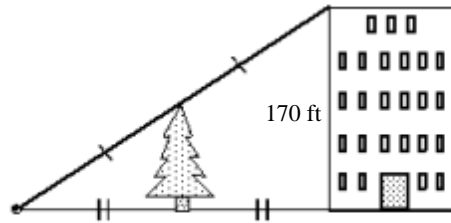
35. B is the midpoint of \overline{AC} , D is the midpoint of \overline{CE} , and $AE = 21$. Find BD . The diagram is not to scale.



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

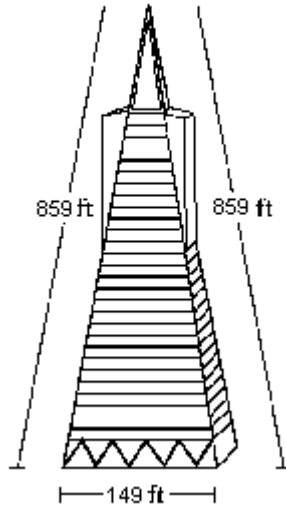


37. Use the information in the diagram to determine the height of the tree. The diagram is not to scale.

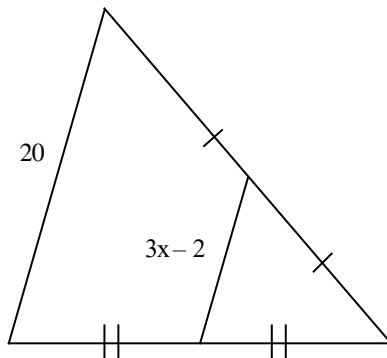


38. A triangular side of the Transamerica Building in San Francisco, California, is 149 feet at its base. If the distance from a base corner of the building to its peak is 859 feet, how wide is the triangle halfway to the top?

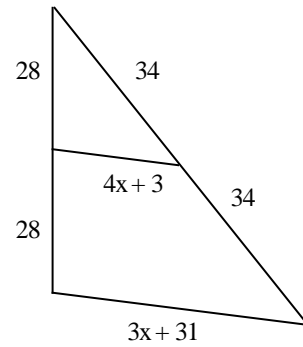
Transamerica Pyramid



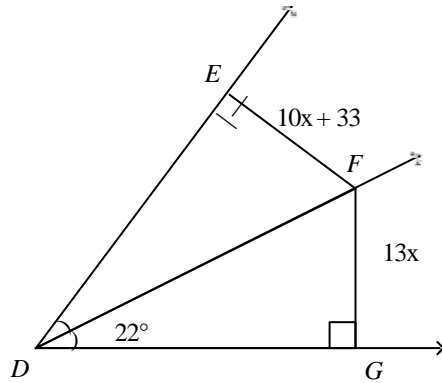
39. Find the value of x .



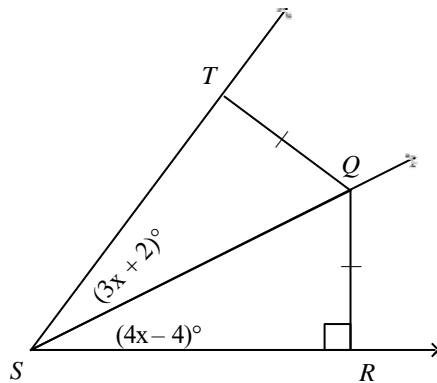
40. Find the length of the midsegment. The diagram is not to scale.



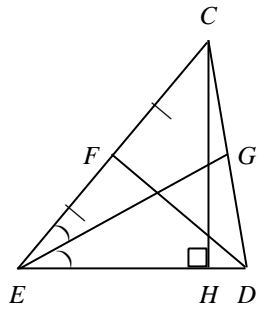
41. \overline{DF} bisects $\angle EDG$. Find the value of x . The diagram is not to scale.



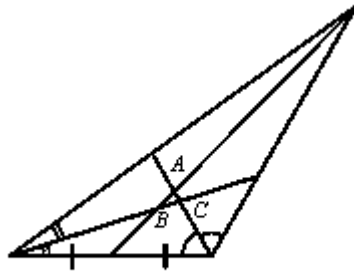
42. Q is equidistant from the sides of $\angle TSR$. Find $m\angle RST$. The diagram is not to scale.



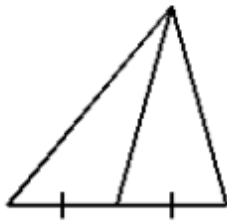
43. Name a median for $\triangle CDE$.



44. Name the point of concurrency of the angle bisectors.



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



GEOM. CH. 5 TEST REVIEW

Answer Section

MULTIPLE CHOICE

1. ANS: A
2. ANS: B
3. ANS: C
4. ANS: C
5. ANS: B
6. ANS: D
7. ANS: B
8. ANS: C
9. ANS: B
10. ANS: A
11. ANS: A
12. ANS: B
13. ANS: A
14. ANS: C
15. ANS: A
16. ANS: D
17. ANS: B
18. ANS: A
19. ANS: D
20. ANS: B
21. ANS: B
22. ANS: D
23. ANS: A
24. ANS: B
25. ANS: A
26. ANS: D

SHORT ANSWER

27. ANS:
 $\overline{BD} \parallel \overline{AE}, \overline{DF} \parallel \overline{AC}, \overline{BF} \parallel \overline{CE},$

PTS: 1 DIF: L2 REF: 5-1 Midsegments of Triangles
OBJ: 5-1.1 Using Properties of Midsegments NAT: NAEP 2005 G3f | ADP K.1.2
STA: MA G.G.2 | MA G.G.2b | MA G.G.10 TOP: 5-1 Example 2
KEY: midsegment | parallel lines | Triangle Midsegment Theorem

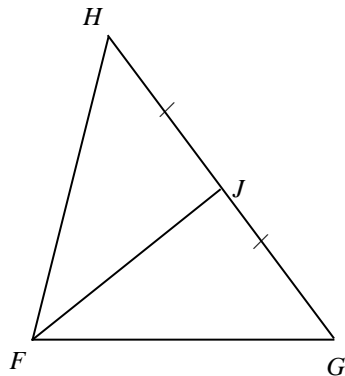
28. ANS:
 $x = 5$

PTS: 1 DIF: L3 REF: 5-1 Midsegments of Triangles
OBJ: 5-1.1 Using Properties of Midsegments NAT: NAEP 2005 G3f | ADP K.1.2
STA: MA G.G.1 | MA G.G.1a | MA G.G.2 | MA G.G.2b | MA G.G.3 | MA G.G.5 | MA G.G.6
KEY: Triangle Midsegment Theorem | midsegment

29. ANS:
 IJ and JK

PTS: 1 DIF: L2 REF: 5-2 Bisectors in Triangles
OBJ: 5-2.1 Perpendicular Bisectors and Angle Bisectors NAT: NAEP 2005 G3b | ADP K.2.2
STA: MA G.G.1 | MA G.G.1a | MA G.G.2 | MA G.G.2b | MA G.G.3 | MA G.G.5 | MA G.G.6
TOP: 5-2 Example 1 KEY: perpendicular bisector | Perpendicular Bisector Theorem

30. ANS:



31. ANS:
If all the angles of figure are not right angles, then it is not a rectangle.

32. ANS:
Assume that $C(0, 3)$ is the midpoint of \overline{AB} . By the Distance Formula, $AC = \sqrt{(2-0)^2 + (3-3)^2} = 2$ and $BC = \sqrt{(-2-0)^2 + (5-3)^2} = \sqrt{8}$.
 $AC \neq BC$ which contradicts the assumption that C is the midpoint of \overline{AB} .

Therefore, C is not the midpoint of \overline{AB} .

33. ANS:

No; for three segments to form the sides of a triangle, the sum of the length of two segments must be greater than the length of the third segment.

34. ANS: 96

35. ANS: 10.5

36. ANS: 38

37. ANS: 85 ft

38. ANS: 74.5 ft

39. ANS: 4

40. ANS: 23

41. ANS: 11

42. ANS: 22

43. ANS: \overline{DF}

44. ANS: C