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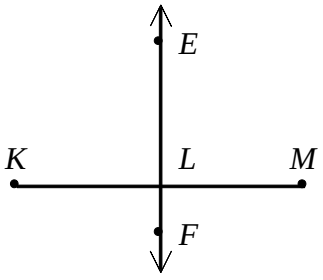
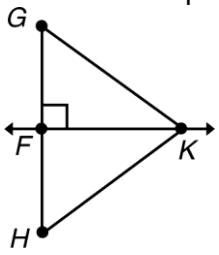
Chapter 5 Review

1. Given: $\overleftrightarrow{EF}$ is the perpendicular bisector of $\overline{KM}$. Name three things that you can conclude.



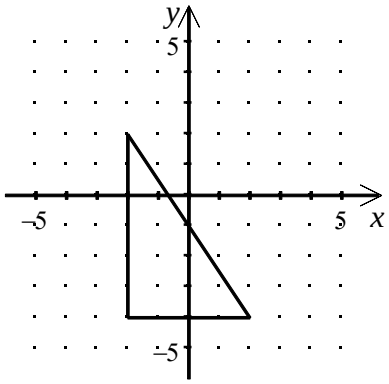
2. A point is equidistant from points *A*(2, 1), *B*(2, –4), and *C*(–3, 1). Find its coordinates.

3. If $\overleftrightarrow{KF}$ is the perpendicular bisector of $\overline{GH}$, then $\measuredangle KGF \cong$ _____.



[A] $\measuredangle KHF$ [B] $\measuredangle KFH$ [C] $\overline{KF}$ [D] $\measuredangle FKG$

4. For the triangle, find the coordinates of the point of concurrency of the perpendicular bisectors of the sides.



[A] (-1,0) [B] (0,-1) [C] (1,-1) [D] (1,-2)

5. The circumcenter of a triangle is equidistant from the three ____ of the triangle.

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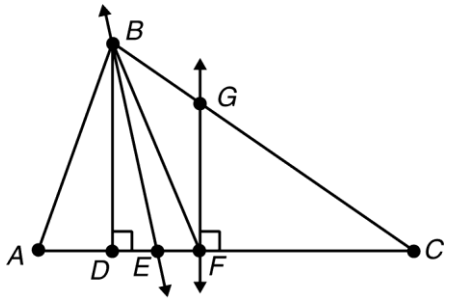
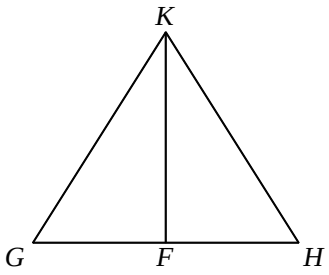
6. Refer to the figure below. Given: $\overline{AF} \cong \overline{FC}$, $\measuredangle ABE \cong \measuredangle EBC$.
Which line is a perpendicular bisector in ΔABC?



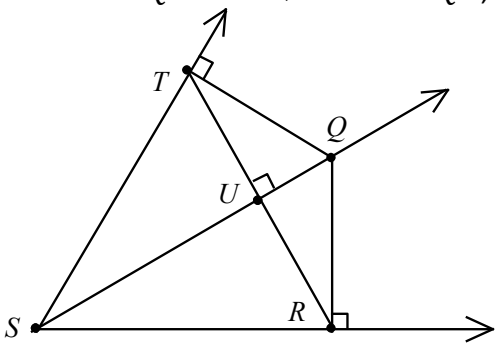
7. The vertices of a triangle are *A*(4, –3), *B*(–6, –3), and *C*(–1, –8). Find its circumcenter.

8. In the two-person tent shown below, $\overleftrightarrow{KF}$ is the perpendicular bisector of $\overline{GH}$. Then $\measuredangle KGF \cong$_____.



[A] $\measuredangle KHF$ [B] $\measuredangle KFH$ [C] $\measuredangle KF$ [D] $\measuredangle FKG$

10. Given: $\overrightarrow{SQ}$ bisects $\measuredangle RST$. Find QR, if $UT = 15$ and $UQ = 36$. (not drawn to scale)



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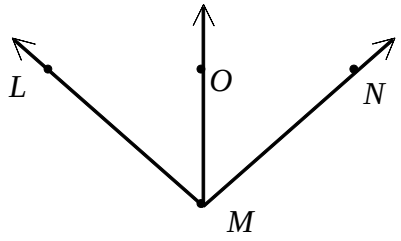
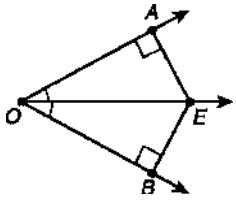
11. In the figure (not drawn to scale), $\overrightarrow{MO}$ bisects $\measuredangle LMN$, $m\measuredangle LMO = 6x^2 - 22x - 12$ and $m\measuredangle NMO = x^2 + 6x$. Solve for *x* and find $m\measuredangle LMN$.



12. $\overrightarrow{OE}$ bisects $\measuredangle BOA$, $\overline{EA} \perp \overline{OA}$, and $\overline{EB} \perp \overline{OB}$. Which statement is NOT true?

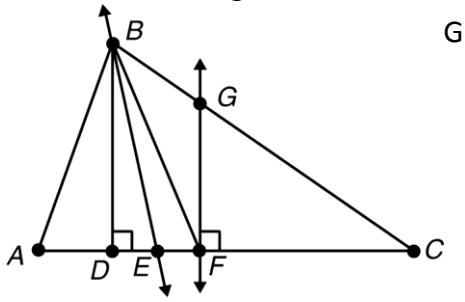


[A] $\measuredangle AEO \cong \measuredangle BEO$ [B] $\measuredangle AOE \cong \measuredangle EAO$

[C] $\overline{AE} \cong \overline{BE}$ [D] $\overline{OA} \cong \overline{OB}$

13. The angle bisectors of a triangle are concurrent at a point called the _____.

14. Refer to the figure below.



Given: $\overline{AF} \cong \overline{FC}$, $\measuredangle ABE \cong \measuredangle EBC$

A median of ΔABC is ____.

[A] $\overleftrightarrow{GF}$ [B] $\overleftrightarrow{BE}$ [C] $\overline{BD}$ [D] $\overline{BF}$

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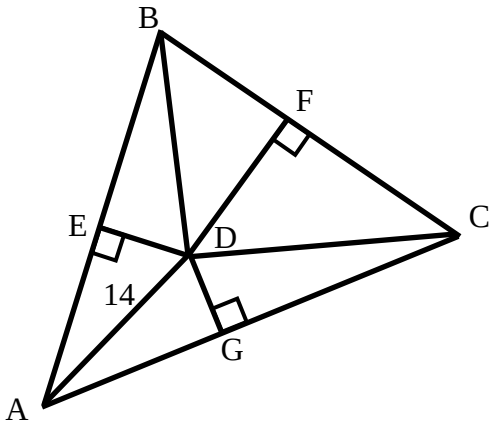
15. The perpendicular bisectors of ΔABC meet at point D.(Round to the nearest tenth)
AC = 19.6 AD = 14

a) Find BD.

b) Find DC.

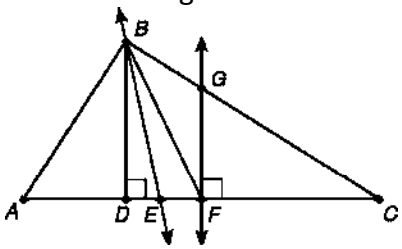
c) Find DG.



16. The medians of a triangle are concurrent. Their common point is called what?

17. If $\overline{QR}$ is an altitude of ΔPQR, what type of triangle is ΔPQR?

18. Refer to figure below.



Given: $\overline{AF} \cong \overline{FC}$, $\measuredangle ABE \cong \measuredangle EBC$

An altitude of ΔABC is ____.
[A] $\overline{BD}$ [B] $\overleftrightarrow{GF}$ [C] $\overline{BF}$ [D] $\overleftrightarrow{BE}$

19. In a triangle, a segment connecting the midpoints of two sides of the triangle is called a _____.

[A] vertex [B] centroid [C] midsegment [D] shortcut

20. The altitudes of a triangle are concurrent. What is the name of their common point?

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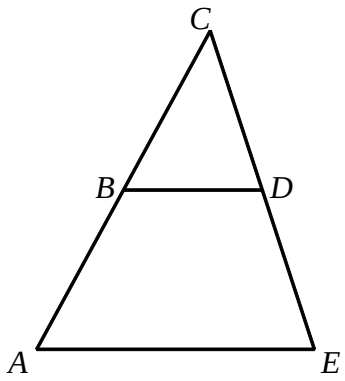
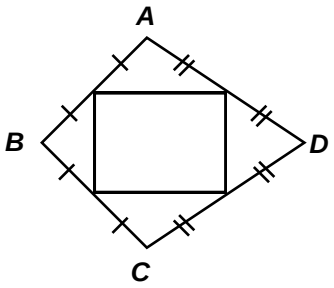
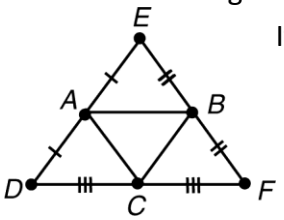
21. Solve for *x* given $BD = 3x + 2$ and $AE = 4x + 8$. Assume *B* is the midpoint of $\overline{AC}$ and *D* is the midpoint of $\overline{CE}$.



22. Find the area of the rectangle if *AC* = 12 and *BD* = 25.

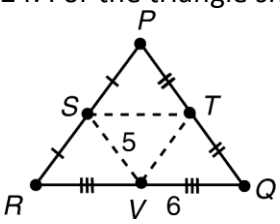


23. Refer to the figure below.



If *EF* = 5*x* + 6 and *AC* = 3*x* – 2, then what is the length of $\overline{BF}$?

24. For the triangle shown, *VS* = 5 and *VQ* = 6. Then *PQ* = _____.



[A] 11 [B] 5 [C] 10 [D] 12

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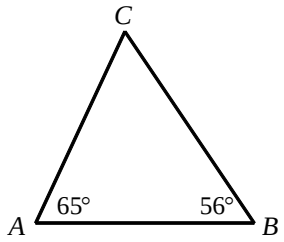
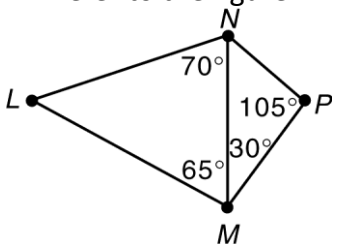
25. The coordinates of the midpoints of the sides of a triangle are *L*(0, 1), *M*(4, 0), and *N*(2, –2). Find the coordinates of the vertices of the triangle.

26. Identify the longest side of ΔABC.



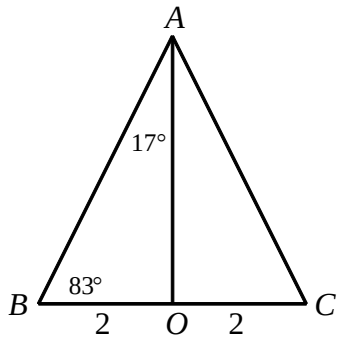
27. Refer to the figure.



The longest side is _____.

[A] $\overline{NM}$ [B] $\overline{LN}$ [C] $\overline{MP}$ [D] $\overline{ML}$

28. Which is the appropriate symbol to place in the blank? (not drawn to scale)
AB __ *AC*



[A] > [B] = [C] < [D] not enough information

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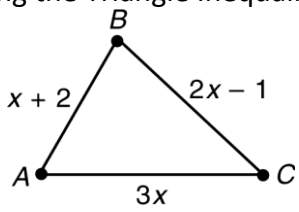
29. Using the Triangle Inequality Theorem, solve for all possible values of *x*.



30. Which side lengths allow you to construct a triangle?

[A] 2, 3, and 8 [B] 6, 8, and 10 [C] 4, 1, and 9 [D] 7, 2, and 2

31. Two sides of a triangle have lengths 8 and 11. What are the possible lengths of the third side *x*?

32. Two sides of a triangle have lengths 7 and 13. The third side has a length that is _____.

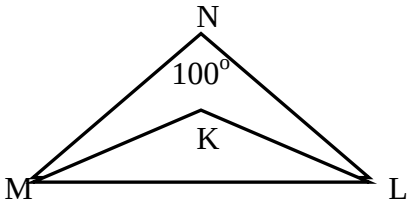
[A] < 20 and > 6 [B] < 6 [C] > 6 and < 13 [D] > 20

33. Which of these lengths could be the sides of a triangle?

[A] 13 cm, 19 cm, 4 cm [B] 19 cm, 9 cm, 11 cm

[C] 19 cm, 13 cm, 5 cm [D] 9 cm, 19 cm, 10 cm

34. In the diagram, $\overline{MK}$ and $\overline{LK}$ are angle bisectors of ΔMNL and $m\measuredangle MNL = 100°$.
Find $m\measuredangle MKL$.



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[1] Any three of the following: $\overline{EF} \perp \overline{KM}$; $\measuredangle ELM, \measuredangle MLF, \measuredangle FLK,$ $and\ \measuredangle KLE\ are\ right\ \measuredangle' s$; $Lis\ the\ midpoint\ of\ \overline{KM}$; $\overline{KL} \cong \overline{LM}$; $EK = EM$; $FK = FM$

[2] $\left(-\frac{1}{2}, -\frac{3}{2}\right)$

[3] [A]

[4] [B]

[5] Vertices

[6] $\overleftrightarrow{GF}$

[7] (–1, –3)

[8] [A]

[10] 39

[11] $x = 6$, $m\measuredangle LMN = 144°$

[12] [B]

[13] Incenter

[14] [D]

[15] a) 14 b) 14 c) 10

[16] Centroid

[17] A right triangle

[18] [A]

[19] [C]

[20] Orthocenter

[21] 2

[22] 75

[23] 28

[24] [C]

[25] (–2, –1), (2, 3), (6, –3)

[26] $\overline{CB}$

[27] [D]

[28] [C]

[29] $x > \frac{3}{4}$

[30] [B]

[31] $3 < x < 19$

[32] [A]

[33] [B]

[34] 140°