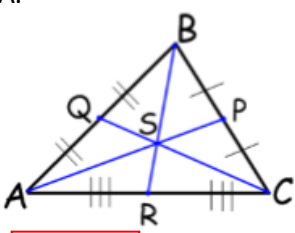
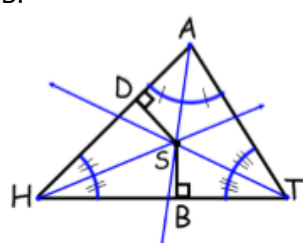
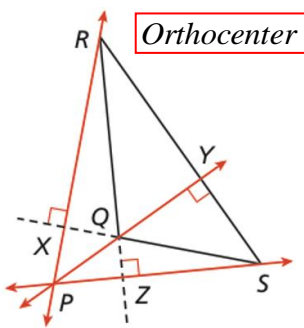
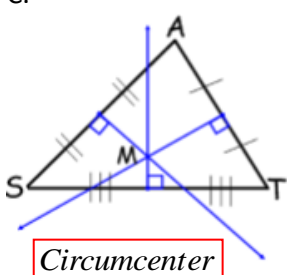
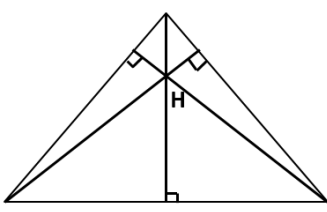
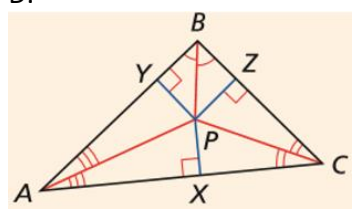
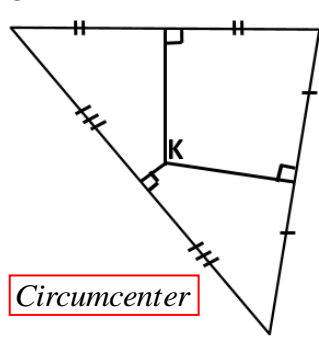
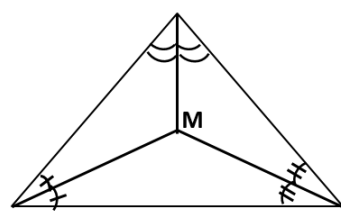
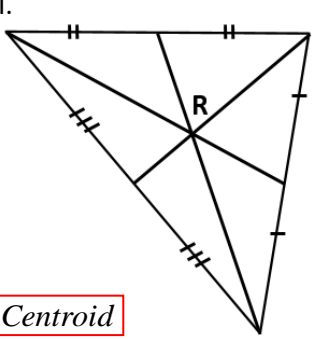
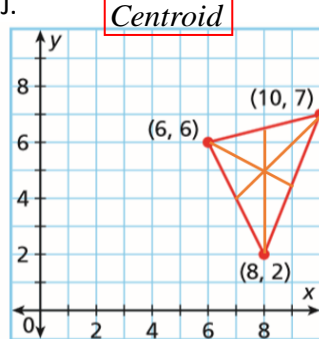
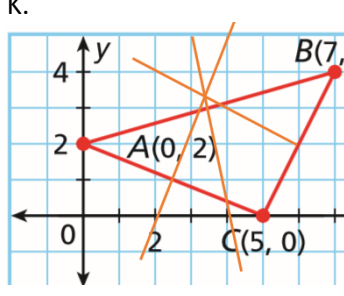
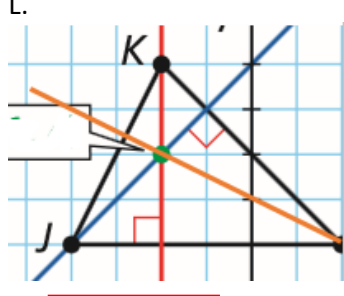
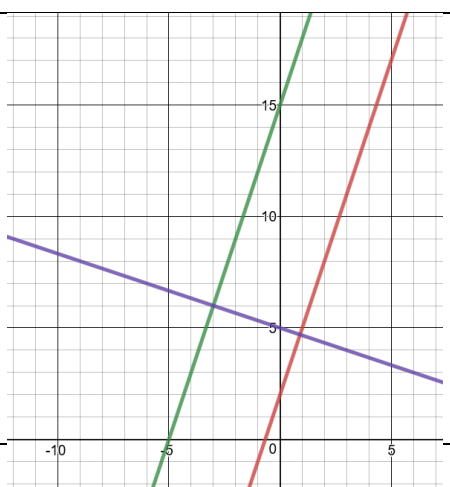


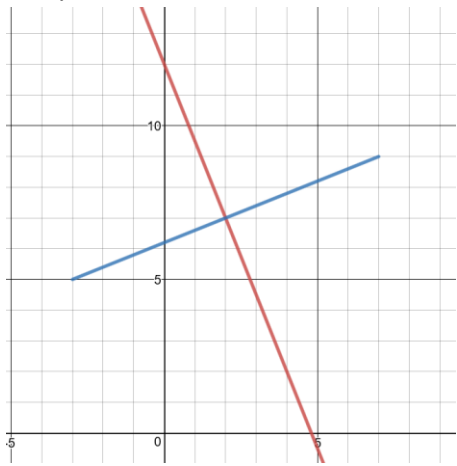
| | |
|---|---|
| 1. Identify each point of concurrency | |
| <p>A.</p>  <p>Centroid</p> | <p>B.</p>  <p>Incenter</p> |
| <p>E.</p>  <p>Orthocenter</p> | <p>C.</p>  <p>Circumcenter</p> |
| <p>F.</p>  <p>Orthocenter</p> | <p>D.</p>  <p>Incenter</p> |
| <p>G.</p>  <p>Circumcenter</p> | <p>H.</p>  <p>Incenter</p> |
| <p>I.</p>  <p>Centroid</p> | <p>J.</p>  <p>Centroid</p> |
| <p>K.</p>  <p>Circumcenter</p> | <p>L.</p>  <p>Orthocenter</p> |
| <p>2. Write the equation of the line in slope-intercept form if it has a slope of $-1/2$ and passes through $(-9, -1)$</p> <p>$y = -\frac{1}{2}x - \frac{11}{2}$</p> | <p>3. Write the equation of the line in slope-intercept form if it passes through $(-1, -2)$ and $(2, 4)$</p> <p>$y = 2x$</p> |
| <p>4. Write the equation of the line in slope-intercept form that is perpendicular to $y = 3/2x - 8$ and passes through $(6, -4)$.</p> <p>$y = -\frac{2}{3}x$</p> | <p>5. Write the equation of the line in slope-intercept form that is parallel to $y = 2/3x + 7$ and passes through $(6, 5)$</p> <p>$y = \frac{2}{3}x + 1$</p> |
| <p>6. Given $y - 3x - 2 = 0$ $y = 3x + 2$ Write the equation of the line in slope-intercept form that is:</p> <p>A. Parallel to the given line and passes through $(-3, 6)$. $y = 3x + 15$</p> <p>B. Perpendicular to the given line and passes through $(-3, 6)$. $y = -\frac{1}{3}x + 5$</p> <p>Graph all three lines and mark them appropriately to show which are parallel and which are perpendicular.</p> |  |

7. Write the equation of the line in slope-intercept form that is the perpendicular bisector of segment XY.

X(7, 9), Y(-3, 5)

$$y = -\frac{5}{2}x + 12$$

Sketch the segment and the perpendicular bisector line to show that your answer is correct.

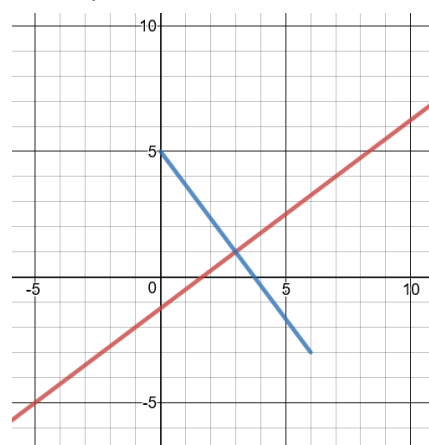


8. Write the equation of the line in slope-intercept form that is the perpendicular bisector of segment AB.

A(6, -3), B(0, 5)

$$y = \frac{3}{4}x - \frac{5}{4}$$

Sketch the segment and the perpendicular bisector line to show that your answer is correct.



9. Find the circumcenter of the triangle with the given vertices

M(-5, 0), N(0, 14), O(0, 0)

$$(-2.5, 7)$$

10. Find the orthocenter of the triangle with the given vertices

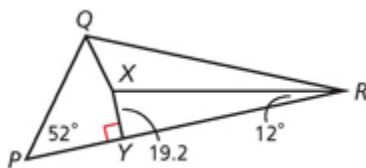
J(-4, 2), K(-2, 6), L(2, 2)

$$(-2, 3.5)$$

11. \overline{QX} and \overline{RX} are angle bisectors of $\triangle PQR$. Find each measure.

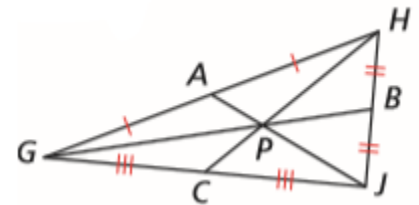
- the distance from X to \overline{PQ}
- $m\angle PQX$

- A. 19.2
B. 52°



12. $GP = 7x - 4$, $PB = 12$, $PC = y$, and $HC = 8y - 15$. Find each length.

- A. $GP = 24$
B. $GB = 36$
C. $HP = 6$
D. $HC = 9$



13. **Design** In the plan for a table, the triangular top has coordinates (0, 10), (4, 0), and (8, 14). The tabletop will rest on a single support placed beneath it.

Where should the support be attached so that the table is balanced?

$$(4, 8)$$

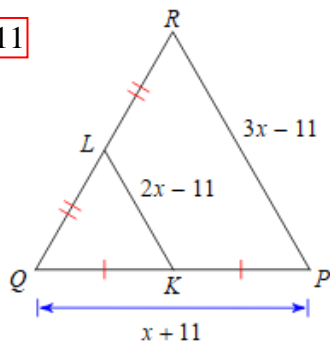
14. Find each length.

$$x = 11$$

RP $\boxed{22}$

LK $\boxed{11}$

QK $\boxed{22}$



15. Find each length

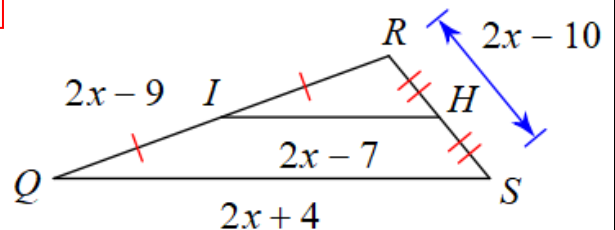
$$x = 9$$

QS $\boxed{22}$

HI $\boxed{11}$

RH $\boxed{4}$

QR $\boxed{18}$



16. Sketch each line on the same graph. Use slope to determine if any of the lines are parallel or perpendicular and mark them to show if they are parallel or perpendicular.

A. $3y - 4x = -21$



$$y = \frac{4}{3}x - 7$$

B. $4y + 3x = 4$



$$y = -\frac{3}{4}x + 1$$

C. $3y - x = 6$



$$y = \frac{1}{3}x + 2$$

D. $4y + 3x = -20$



$$y = -\frac{3}{4}x - 5$$

E. $x = 5$

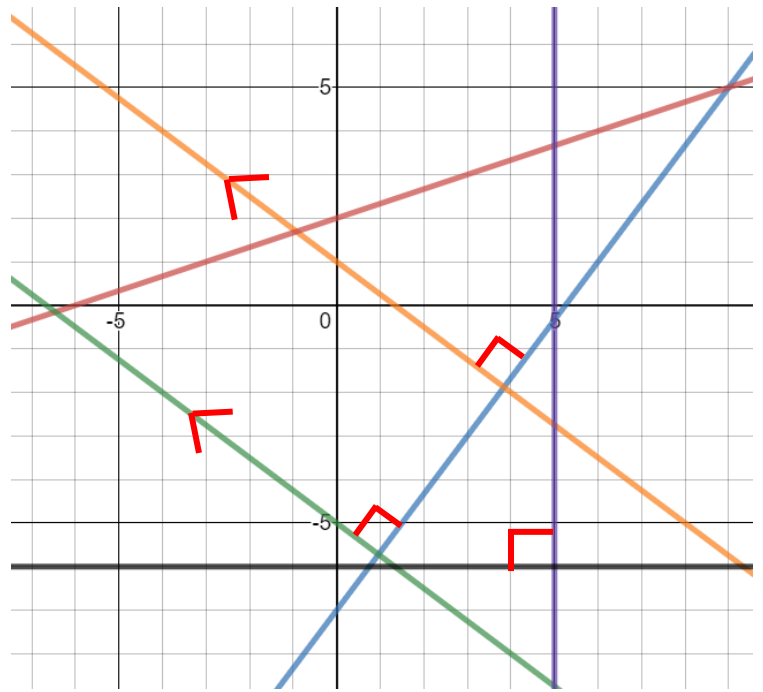


$$x = 5$$

F. $y = -6$

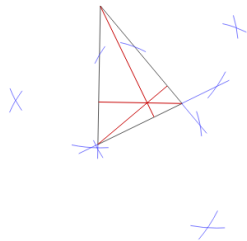


$$y = -6$$

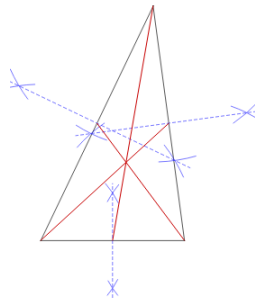


17. Draw four triangles so that you can construct each of the following points of concurrency.

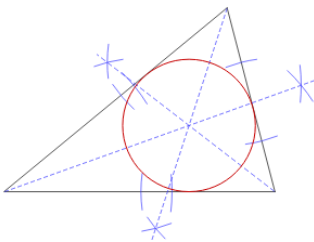
Orthocenter – The intersection of the altitudes form the orthocenter



Centroid – The intersection of the medians (segments from midpoint to opposite vertex) form the centroid.



Incenter – The intersection of the angle bisectors form the incenter. The inscribed triangle has a center at the incenter and just touches each side of the triangle.



Circumcenter – The intersection of the perpendicular bisectors form the circumcenter. The circumscribed triangle has a center at the circumcenter and touches each vertex of the triangle.

