

Warm- up

On half sheet of paper

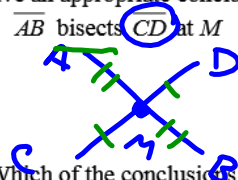
Don't Forget Review
Due Today!! Counts as
a Quiz Grade

Write the **equation** of the **perpendicular bisector** of
the points $A(-1, -3)$ and $B(5, 5)$

Name: _____

Date _____

Geometry HW: CG - 7

- Find the coordinates of the midpoint of the segment that joins each pair of points:
 - (6, 8) and (4, 10)
 - (58, -65) and (-12, 94)
 - (5a, 2b) and (a, 8b)
- $M(7, 4)$ is the midpoint of \overline{CD} . If the coordinates of C are (4, 6), find the coordinates of D .
- The midpoint of \overline{PQ} is $M(-1, 6)$. The coordinates of P are (x, y) and the coordinates of Q are $(x + 8, -3y)$. Find the values of x and y .
- Segment \overline{AB} has $A(-2, 8)$ and $B(10, -2)$. Find the coordinates of point Q on \overline{AB} such that $AQ = \frac{1}{4}AB$.
- Give an appropriate conclusion for each of the following
 - \overline{AB} bisects \overline{CD} at M
 - \overline{CD} bisects \overline{AB} at M
 - Which of the conclusions from part (a) would be true if \overline{AB} and \overline{CD} bisect each other at M ?
- Segment \overline{AB} has endpoints $A(1, 2)$ and $B(7, 4)$. Find the equation of the perpendicular bisector of \overline{AB} .

7. Verify using coordinate geometry that the line l with equation $y = \frac{3}{2}x + 2$ is the perpendicular bisector of the segment \overline{AB} with endpoints $A(-1, 7)$ and $B(5, 3)$. (Note: this problem has two separate parts: *perpendicular* and *bisector*. Proving one does not automatically prove the other.)

Give the center and radius of the circle.

4. $x^2 + (y+3)^2 = 25$

Center: (0, -3)

Radius: 5

5. $(x-5)^2 + (y-4)^2 = 1$

Center: (_____, _____)

Radius: _____



Drag the star to the circle to check your answers.

Write the standard equation of the circle.

6. Center: (9, -1)

Radius: 2

$$\frac{(x-9)^2 + (y+1)^2 = 2^2}{(x-9)^2 + (y+1)^2 = 4}$$

7. Center: (-3, 7)

Radius: 6 *Reese*

$$\frac{(x+3)^2 + (y-7)^2 = 6^2}{(x+3)^2 + (y-7)^2 = 36}$$

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Geometry Notes CG - 8: Dividing a Segment in Proportion

Ex: Find the coordinates of the point P on the directed line segment from $A(-4, 10)$ to $B(6, -5)$ that partitions the segment into a ratio of $\frac{3}{2}$.

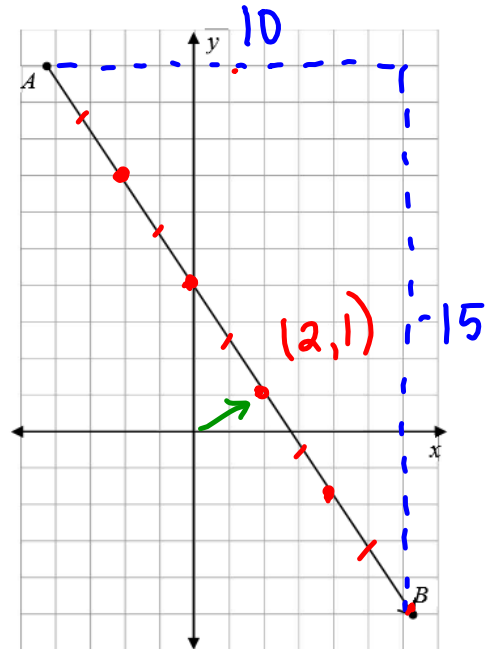
$$\textcircled{1} \quad 3+2=5$$

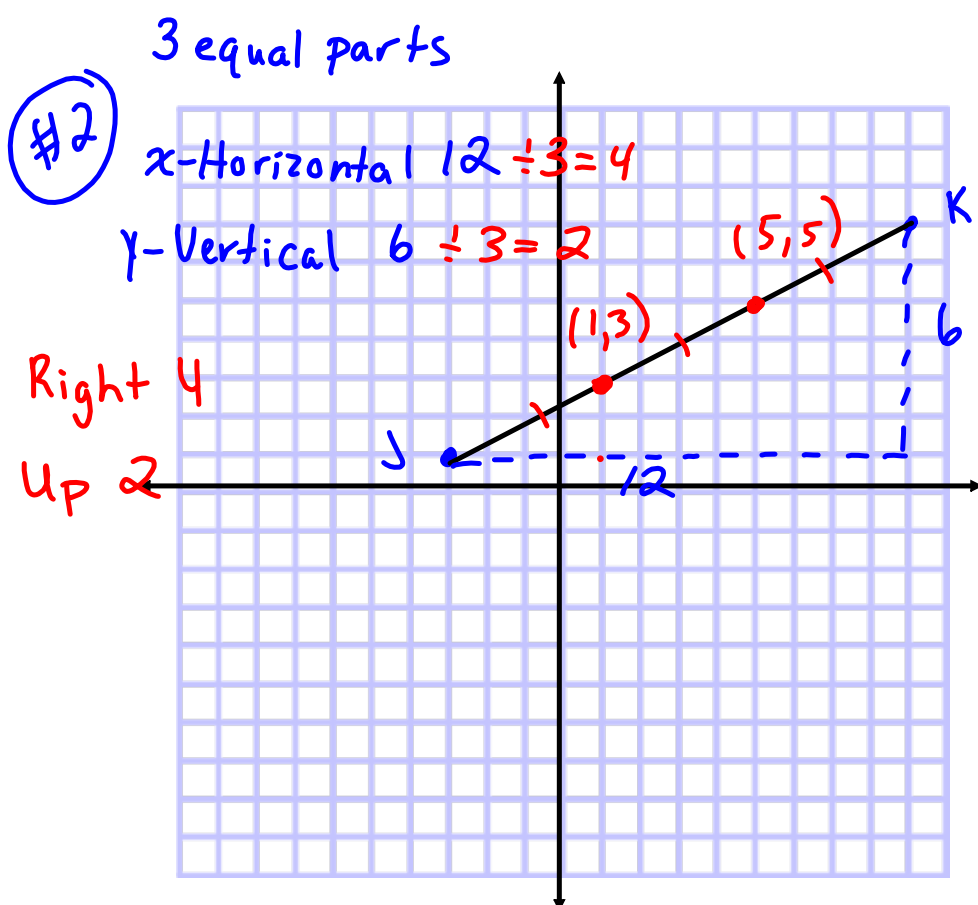
\overline{AB} being cut into 5 equal parts

$$\textcircled{2} \quad x\text{-Horizontal } 10 \div 5 = 2$$

$$y\text{-Vertical } -15 \div 5 = -3$$

$$\textcircled{3} \quad \left. \begin{array}{l} \rightarrow \text{Right } 2 \\ \rightarrow \text{Down } 3 \end{array} \right\} 3x$$





5. Graph $\triangle ABC$ having vertices $A(0, 4)$, $B(4, 14)$ and $C(8, 0)$.
- Find the midpoints of \overline{AB} , \overline{BC} and \overline{CA} . Call them M , N and P respectively.
 - Draw \overline{AN} , \overline{BP} and \overline{CM} . These are called medians of the triangle.
 - Find the point where all three medians intersect. Call it G . This is called the centroid of the triangle.
 - Show that G divides each median in a 2:1 ratio.

