

Sep 3-5:06 PM

IMPORTANT INFO

Email: cody.rountree23@gmail.com
Website: codyroutree.weebly.com
Office: PE Area *further office near Mac gym)

MATERIALS

Materials you must bring every class!!!

- Graph paper notebook
- Graph paper workbook
- Scientific calculator
- Agenda
- Textbook (can leave in class)
- Water bottle
- Pencils, pens, eraser, highlighter, ruler

Sep 3-5:35 PM

PLAN

1. Website
2. Review question
3. Finish Distance between a line
4. Mid-point and division point

Sep 3-5:08 PM

REVIEW DISTANCE

Calculate the distance of the following points:

(-1, -3) and (2, 3)

$$d(A,B) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$x_1 = -1$
 $x_2 = 2$
 $y_1 = -3$
 $y_2 = 3$

$$d = \sqrt{(2 - (-1))^2 + (3 - (-3))^2}$$

$$d = \sqrt{3^2 + 6^2}$$

$$d = \sqrt{9 + 36}$$

$$d = \sqrt{45}$$

Sep 4-5:19 PM

Determine the perimeter of triangle ABC on the right.

$P = AB + AC + BC \rightarrow 10.3$

$A = (2, 3)$
 $B = (-1, 1)$
 $C = (3, -1)$

$$d(AB) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$x_1 = 2 \quad y_1 = 3$
 $x_2 = -1 \quad y_2 = 1$

$$d(AB) = \sqrt{(-1 - 2)^2 + (1 - 3)^2}$$

$$d(AB) = \sqrt{-3^2 + -2^2}$$

$$d(AB) = \sqrt{9 + 4}$$

$$d(AB) = \sqrt{13} = 3.6$$

Aug 29-12:39 PM

$BC \rightarrow B = (-1, 1)$
 $C = (3, -1)$

$$x_1 = -1$$

$$x_2 = 3$$

$$y_1 = 1$$

$$y_2 = -1$$

$$d(BC) = \sqrt{(3 - (-1))^2 + (-1 - 1)^2}$$

$$d(BC) = \sqrt{4^2 + -2^2}$$

$$d(BC) = \sqrt{16 + 4}$$

$$d(BC) = \sqrt{20} = 4.47$$

Sep 5-11:39 AM

$$AC = \sqrt{(3-2)^2 + (-1-3)^2}$$

$$A = (2, 3) \quad C = (3, -1)$$

$$= \sqrt{1^2 + -4^2}$$

$$= \sqrt{1 + 16}$$

$$= \sqrt{17} = 4.1$$

Sep 5-11:46 AM

MID POINT OF A LINE

When asked to find the coordinates of a point in the middle

$$x_m = \frac{x_1 + x_2}{2}, y_m = \frac{y_1 + y_2}{2}$$

Steps:

1. Identify (x_1, y_1) & (x_2, y_2)
2. Input values in formula
3. Solve

ex:

Given endpoints of segment AB, A(-1, 4) and B(5, -2) calculate the mid point coordinates $\rightarrow M(x_m, y_m)$

$x_1 = -1 \quad y_1 = 4$
 $x_2 = 5 \quad y_2 = -2$

$$x_m = \frac{x_1 + x_2}{2} = \frac{-1 + 5}{2} = \frac{4}{2} = 2$$

$$y_m = \frac{y_1 + y_2}{2} = \frac{4 + -2}{2} = \frac{2}{2} = 1$$

Aug 29-12:44 PM

Determine the coordinates of the mid-point of segment AB

A(2, 1); B(-3, 5)

$$x_1 = 2 \quad y_1 = 1$$

$$x_2 = -3 \quad y_2 = 5$$

$$x_m = \frac{x_1 + x_2}{2} = \frac{2 + -3}{2} = \frac{-1}{2} = -0.5$$

$$y_m = \frac{y_1 + y_2}{2} = \frac{1 + 5}{2} = \frac{6}{2} = 3$$

Midpoint: $(-0.5, 3)$

A(-3, -1); B(2, -5)

$$x_m = \frac{-3 + 2}{2} = -\frac{1}{2}$$

$$y_m = \frac{-1 + -5}{2} = \frac{-6}{2} = -3$$

Midpoint: $(-0.5, -3)$

Aug 29-12:51 PM

PLAN

1. Review question
2. Finish up midpoint
3. Division point

Sep 5-8:24 PM

REVIEW QUESTION

Determine the coordinates of the mid-point of segment CD

C(-4, 2); D(2, -3)

$$M_x = \frac{x_2 + x_1}{2}$$

$$M_y = \frac{y_2 + y_1}{2}$$

$$m_x = \frac{2 + (-4)}{2} = \frac{-2}{2} = -1$$

$$m_y = \frac{(-3) + 2}{2} = \frac{-1}{2} = -0.5$$

M = (-1, -0.5)

Sep 5-8:26 PM

Given $A(2, 3)$, $B(-1, 1)$ and $C(3, -1)$ the vertices of triangle ABC. What is the length of the median AM?

NOTE: A Median of a triangle is a line segment joining a vertex to the midpoint of the opposite side.

A(2, 3)
B(-1, 1)
C(3, -1)

$$M_{BC} = \frac{x_1 + x_2}{2} = \frac{y_1 + y_2}{2}$$

$B(-1, 1) \quad C(3, -1)$

$$m_x = \frac{-1 + 3}{2} = \frac{2}{2} = 1$$

$$m_y = \frac{1 + (-1)}{2} = \frac{0}{2} = 0$$

$M_{BC} = (1, 0)$

$$d_{AM} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

A(2, 3) M(1, 0)

$$d_{AM} = \sqrt{(1-2)^2 + (0-3)^2}$$

$$d_{AM} = \sqrt{(-1)^2 + (-3)^2}$$

$$d_{AM} = \sqrt{1 + 9} = \sqrt{10} = 3.1$$

Aug 29-12:55 PM

Given $M(1, -2)$ the mid-point of segment AB . Determine the coordinates of B if the coordinates of A are $A(-3, 4)$?

$$B = (5, -8)$$

Aug 30-1:21 PM

So far...

Sep 5-8:09 PM

**3 OUT OF 2
PEOPLE
HAVE
TROUBLE
WITH
FRACTIONS**

Sep 5-9:05 PM

DIVISION POINT OF A LINE
When asked to find a point part way

$x_1 + \frac{P}{W}(x_2 - x_1), y_1 + \frac{P}{W}(y_2 - y_1)$

ex:
Given end-points $A(-3, 4)$ and $B(6, 1)$.
What are the coordinates of point P that divides line AB in the ratio of $2:1$ (from A)?

Steps:
1. Identify (x_1, y_1) & (x_2, y_2)
2. Identify the ratio
3. Input values into formula
4. Solve

Note:
- Starting point is key as it determines what your x_1 and y_1 will be
- If the ratio is given change it into a fraction

$2:1 = 2/(2+1) = 2/3$
 $3:4 = 3/(3+4) = 3/7$

Aug 29-12:56 PM

$A(-3, 4)$ $B(6, 1)$ $R = 2:1 = \frac{2}{3}$

$P_x = x_1 + \frac{P}{W}(x_2 - x_1)$
 $P_x = -3 + \frac{2}{3}(6 - (-3))$
 $P_x = -3 + \frac{2}{3}(9) \rightarrow 6$
 $P_x = 3$

$P_y = 4 + \frac{2}{3}(1 - 4)$
 $P_y = 4 + \frac{2}{3}(-3)$
 $P_y = 4 + (-2) = 2$
 $P_y = 2$

$P(3, 2)$

Sep 6-11:40 AM

Determine the coordinates of point P which divides line segment AB in the given ratio. (from A)

$A(-3, 1)$ and $B(6, 3)$; ratio $3:1$

$P_x = -3 + \frac{3}{4}(6 - (-3))$
 $P_x = -3 + \frac{3}{4}(9)$
 $P_x = -3 + 6.75$
 $P_x = 3.75$

$P_y = 1 + \frac{3}{4}(3 - 1)$
 $P_y = 1 + \frac{3}{4}(2)$
 $P_y = 1 + 1.5 = 2.5$

$P(3.75, 2.5)$

$A(14, 4)$ and $B(2, 1)$; ratio $1:2$ (from A)

$P_x = 14 + \frac{1}{3}(2 - 14)$
 $P_x = 14 + \frac{1}{3}(-12) = 10$

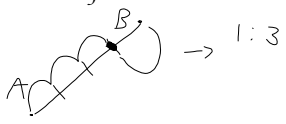
Find the point $\frac{1}{4}$ of the way from $(10, 25)$ to $(90, 65)$

Aug 29-1:10 PM

Given the end-points $A(2, 1)$ and $B(6, 9)$ of segment AB . The point P divides segment AB in the ratio $3:1$ from A .

a) Determine the ratio in which point P divides segment AB from B .

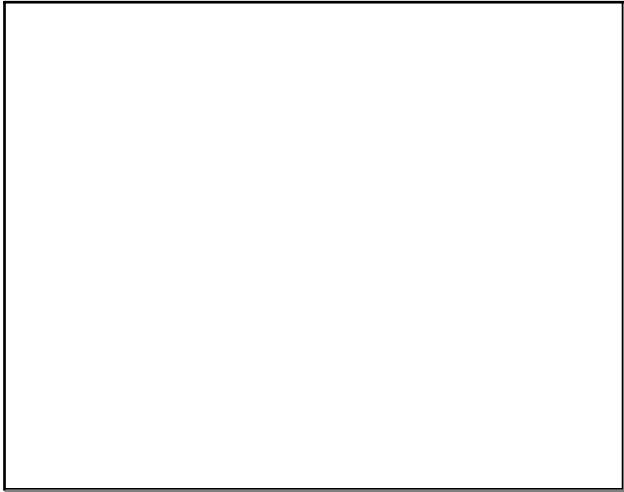
$4:3$ from A
 $B = 3:4$



b) Determine the coordinates of point P in two ways:
 from A :

From B :

Aug 29-1:09 PM



Sep 5-9:04 PM

Attachments

Sample-Free-Graph-Paper-PDF-Generator.jpg

funny-math-quote-2-picture-quote-1.jpg