Notes Section 1.2 Part 2 – End of Course Test Questions

Partitioning a Segment (3 methods)

Line segment AB has endpoints $A(-2, 0)$ and $B(4, 12)$. Point C is on line segment AB and is located at $(0, 4)$.

What is the ratio of $\frac{AC}{CB}$?

A B C

Distance Formula

$AC = \sqrt{[\Delta x]^2 + [\Delta y]^2}$

$= \sqrt{[-2-0]^2 + [0-4]^2}$

$= \sqrt{[-2]^2 + [-4]^2}$

$= \sqrt{4+16}$

$AC = \sqrt{20}$

$CB = \sqrt{[\Delta x]^2 + [\Delta y]^2}$

$= \sqrt{[4-0]^2 + [12-4]^2}$

$= \sqrt{[4]^2 + [8]^2}$

$= \sqrt{16+64}$

$CB = \sqrt{80}$

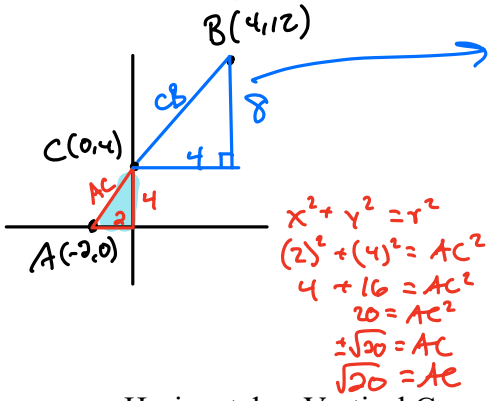
$\frac{AC}{CB} = \frac{\sqrt{20}}{\sqrt{80}}$

Pythagorean Theorem

(3 methods)

ts $A(-2, 0)$ and $B(4, 12)$. Point C is on line segment AB and is located at $(0, 4)$.

A B C



$x^2 + y^2 = r^2$

$(2)^2 + (4)^2 = AC^2$

$4 + 16 = AC^2$

$20 = AC^2$

$\pm\sqrt{20} = AC$

$\sqrt{20} = AC$

$x^2 + y^2 = r^2$

$(4)^2 + (8)^2 = CB^2$

$16 + 64 = CB^2$

$80 = CB^2$

$\pm\sqrt{80} = CB$

$\sqrt{80} = CB$

Line segment AB has endpo...

What is the ratio of $\frac{AC}{CB}$?

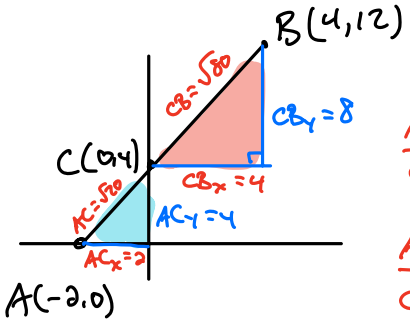
$\frac{AC}{CB} = \frac{\sqrt{20}}{\sqrt{80}}$

Horizontal or Vertical Components

(3 methods)

ts $A(-2, 0)$ and $B(4, 12)$. Point C is on line segment AB and is located at $(0, 4)$.

A B C



$\frac{AC}{CB} = \frac{\sqrt{20}}{\sqrt{80}} = \frac{1}{2}$

$\frac{AC_x}{CB_x} = \frac{2}{4} = \frac{1}{2}$

$\frac{AC_y}{CB_y} = \frac{4}{8} = \frac{1}{2}$

we will learn later

If two Δ's are similar, corresponding ratios are =.

2.07 (1000) = 2070 thousand

The Answer is in the Question

Helen wants to know the density of a rock in grams per cubic centimeter. The rock has a mass of 2.07 kilograms and a volume of 700 cubic centimeters. What is the density of the rock, in grams per cubic centimeter, $\frac{g}{cm^3}$?

$\frac{2070\ g}{700\ cm^3}$

Formula or Draw a Pic

Point A is located at (1, 7). The midpoint of line segment AB is point C(-3, 6). What are the coordinates of point B?

Formula

A(1,7) C(-3,6) B(x, y)

$M = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

$(-3, 6) = \left(\frac{1+x}{2}, \frac{7+y}{2}\right)$

$-3 = \frac{1+x}{2}$ $\quad 6 = \frac{7+y}{2}$

$-6 = 1+x$ $\quad 12 = 7+y$

$-7 = x$ $\quad 5 = y$

$\therefore B(-7, 5)$

Draw a Pic & Count

