⊥ lines → ⊥ bisector → circumcenter
→ Altitude → orthocenter

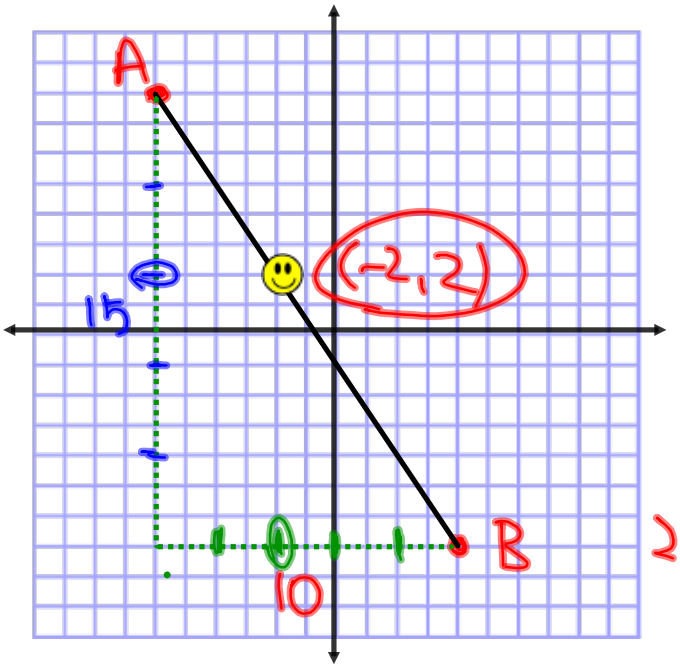
$m_1 = -\frac{1}{m_\perp}$

a point on $\overline{AB}$ w/ ratio.

mid pt.

dist.

Point - slope
y int - slope
standard
} forms of a linear eq.




A(-6, 8)

B(4, -7)

C is on $\overline{AB}$ & b/w A & B.

AC : CB = 2 : 3

Find C

$2a+3a=10$

$a=2$

$2b+3b=15$

$b=3$

---

x-value

B − A → 4 − (−6) = 10

from A.

$2a+3a=10$

$a=2$

y-value

B − A → −7 − 8 = −15

$2b+3b=-15$

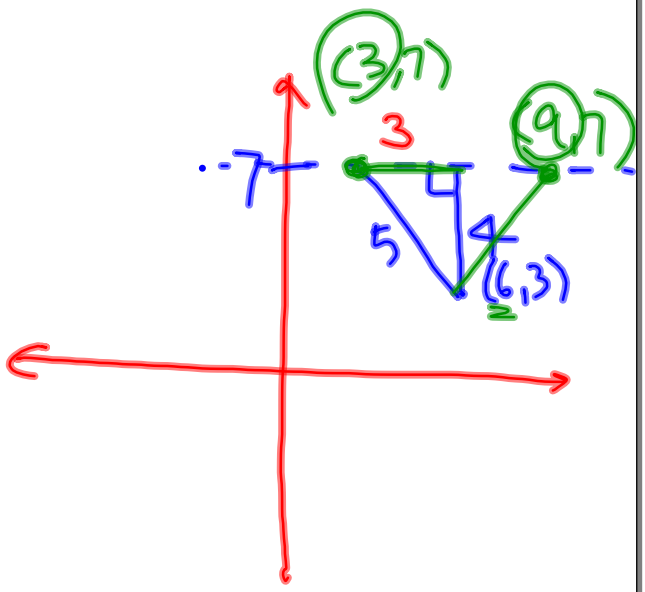
$b=-3$

$(-6+2(2),\ 8+2(-3))$

$= (-2, 2)$

A(6, 3)  B(x, 7)

If AB = 5. Find x.




① $d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$ ②

$5=\sqrt{(6-x)^2+(3-7)^2}$

$25=(6-x)^2+16$

$9=(6-x)^2$

$\pm 3=(6-x)$

$-6\pm 3=-x$

$-6+3=-3$

$-6-3=-9$ } $=-x$

$x=3, 9$