

Sub:

show this if you are not confident teaching math.

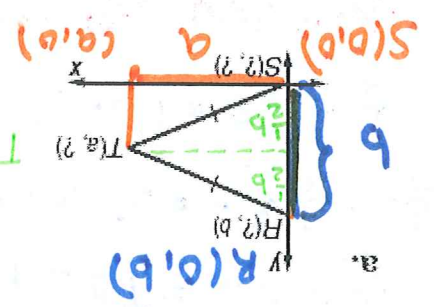
Triangle Coordinate Geometry Notes

students MUST finish.

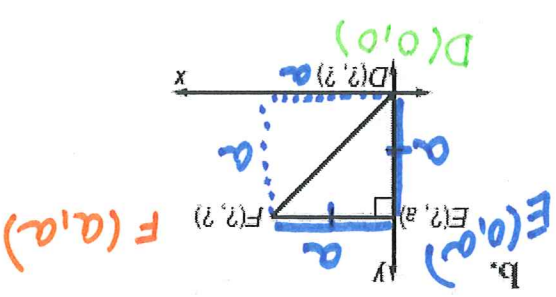
When positioning figures

- Place at least one side on an axis
- Use as few variables as possible for coordinates

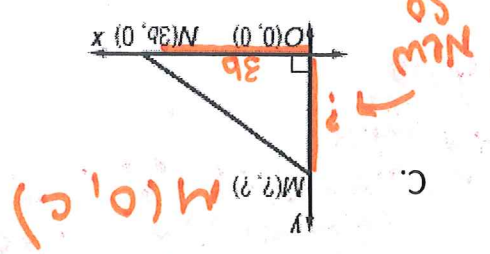
Ex 1 Find the missing coordinates of each triangle.



$T(a, \frac{b}{2})$



$E(0, a)$



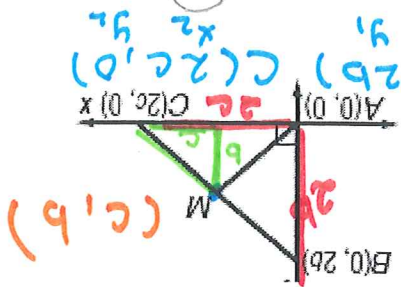
$M(1.5b, 0)$

New So Pick dif. variable

Ex 2

Given: $\triangle ABC$ is a right triangle with hypotenuse BC . M is the midpoint of BC .

A. Find the coordinates of point M .



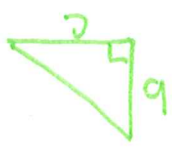
$A(0, 0)$
 $B(0, 2b)$
 $C(2c, 0)$
 $M(c, b)$

KNOW Midpt Formula

① $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
 ② $M = \left(\frac{0 + 2c}{2}, \frac{0 + 2b}{2} \right) = (c, b)$
 ③ $M = \left(\frac{2c}{2}, \frac{2b}{2} \right) = M(c, b)$

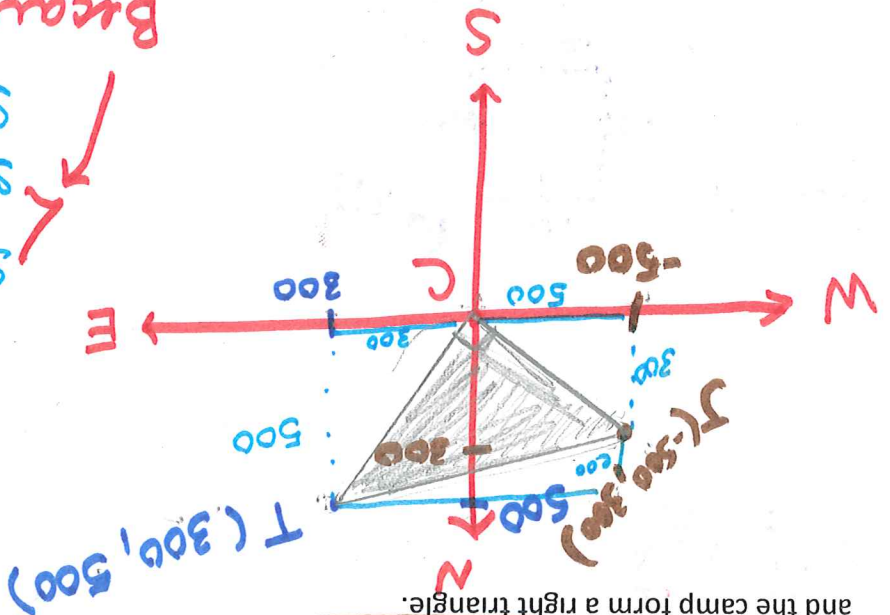
B. Find lengths of BC and MC . Show work!

① $MC^2 = b^2 + c^2$
 $\sqrt{MC^2} = \sqrt{b^2 + c^2}$
 $MC = \sqrt{b^2 + c^2}$



① $BC^2 = (2c)^2 + (2b)^2$
 $BC^2 = 4c^2 + 4b^2$
 $BC = \sqrt{4b^2 + 4c^2}$

Ex5. Tami and Juan are hiking. Tami hikes 300 feet east of the camp and then hikes 500 feet north. Juan hikes 500 feet west of the camp and then 300 feet north. Prove that Juan, Tami and the camp form a right triangle.



To PROVE a right & we must show all slopes

$$\text{slope } CT = \frac{500}{300} = \frac{5}{3}$$

$$\text{slope } JC = -\frac{300}{500} = -\frac{3}{5}$$

$$\text{slope } TJ = \frac{200}{800} = \frac{1}{4}$$

Because $\frac{5}{3}$ and $-\frac{3}{5}$ are op. reciprocals,

CT ⊥ JC. ∴ It forms a right Δ by

def.

Ex6. A motor boat is located 800 yards from the port. There is a ship 800 yards to the east and another ship 800 yards to the north of the motor boat. Show this creates an isosceles triangle.

