

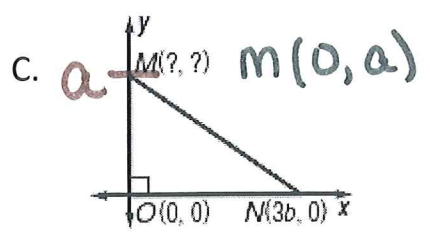
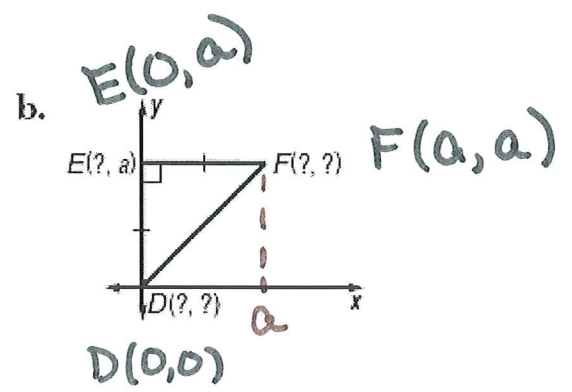
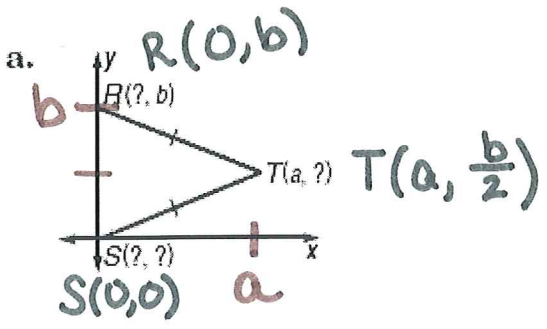
Name _____

Triangle Coordinate Geometry Notes

When positioning figures

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

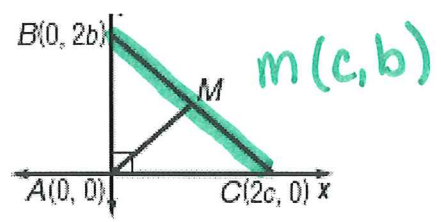
Ex 1 Find the missing coordinates of each triangle.



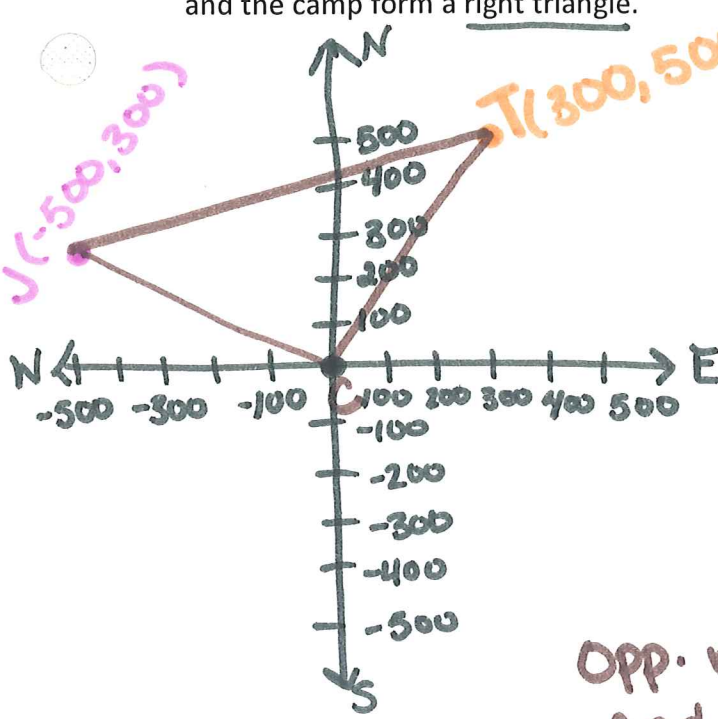
Ex 2 Find the coordinates of point M.

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

$$\begin{aligned} \text{Midpoint } m &= \left(\frac{x+x}{2}, \frac{y+y}{2} \right) \\ &= \left(\frac{0+2c}{2}, \frac{2b+0}{2} \right) \\ &= \left(\frac{2c}{2}, \frac{2b}{2} \right) \\ &= (c, b) \end{aligned}$$



Ex 3. 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 form a right Δ , look for opp. reciprocal slopes.

Slopes:

$$TC = \frac{500 - 0}{300 - 0} = \frac{500}{300} = \frac{5}{3}$$

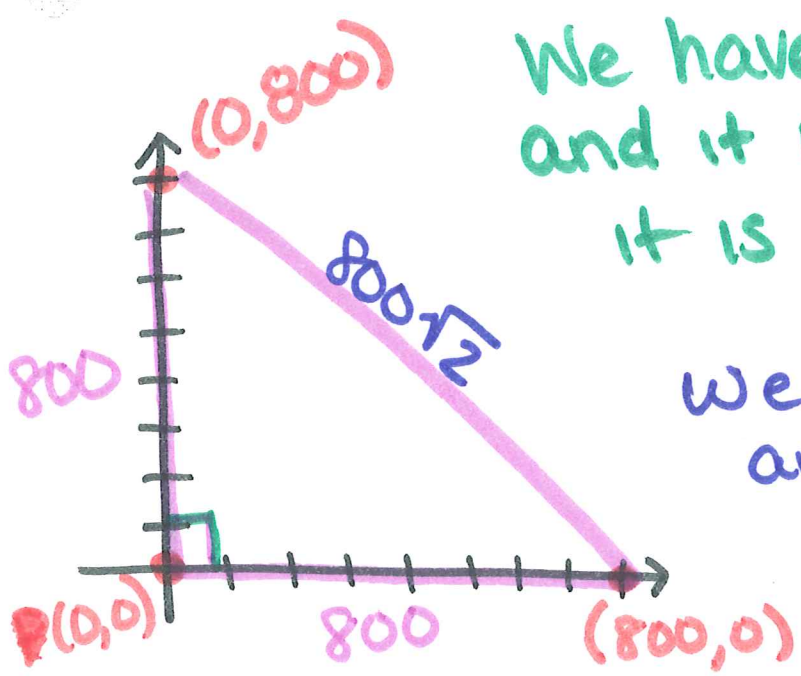
$$JC = \frac{300 - 0}{-500 - 0} = \frac{300}{-500} = -\frac{3}{5}$$

opposite reciprocals

Opp. reciprocal slopes $\therefore TC \perp JC$
and form a right Δ

Lets do one more.....

Ex 4. 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.



We have an isosceles Δ
and it is a right $\Delta \therefore$
it is a 45-45-90 Δ .

We can count the legs
are each 800, then
we know by 45-45-90 Δ
that the hypotenuse
is $800\sqrt{2}$

Yes, it is isosceles!