

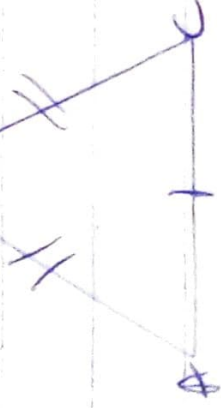
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MAT 102

1.  $A(6, -5)$ ,  $B(-2, 1)$ ,  $C(0, 3)$



$$\overline{AB} = \sqrt{(6 - (-2))^2 + (-5 - 1)^2}$$

$$\overline{AB} = \sqrt{64 + 36}$$

$$\overline{AB} = \sqrt{100} = 10$$

$$\overline{AC} = \sqrt{(6 - 0)^2 + (-5 - 3)^2}$$

$$\overline{AC} = \sqrt{36 + 64}$$

$$\overline{AC} = \sqrt{100} = 10$$

$\overline{AB} = \overline{AC}$  in  $\triangle ABC$  is an isosceles triangle

2.  $P(2, -3)$ ,  $Q(-4, 9)$ ,  $R(14, -15)$

$$\textcircled{a} \overline{QR} = \sqrt{(-4 - 14)^2 + (9 - (-15))^2}$$

$$\overline{QR} = \sqrt{324 + 576} = \sqrt{900} = 30$$

$$\begin{aligned} &= \sqrt{(5-4)^2 + (-3-4)^2} \\ &= \sqrt{81 + 144} \\ &= \sqrt{225} = 15 \end{aligned}$$

$R$  cannot divide line  $PQ$  because line  $PQ$  is shorter than line  $RQ$ .  
∴  $P$  is the midpoint of line  $RQ$ .