

Name Key

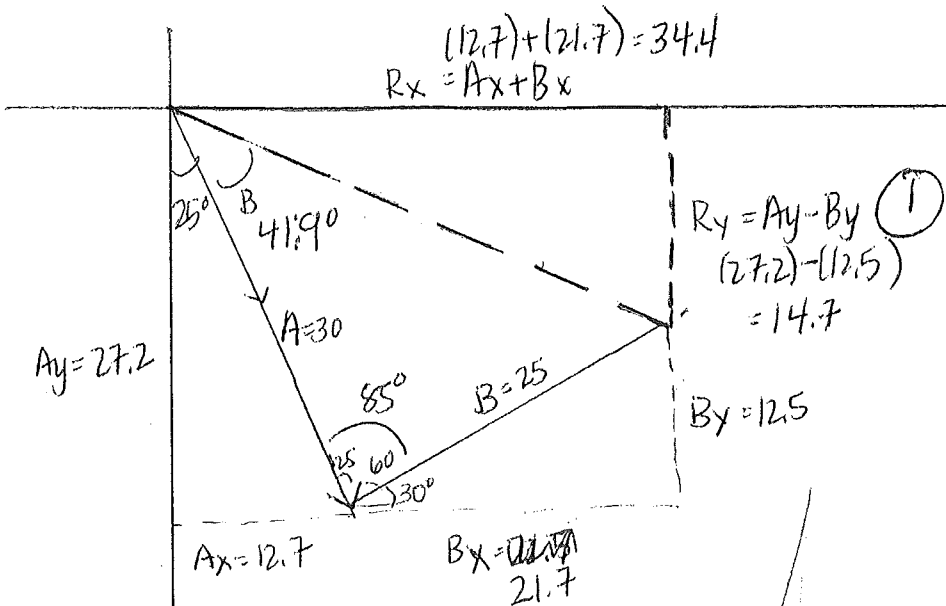
Hour \_\_\_\_\_

#11

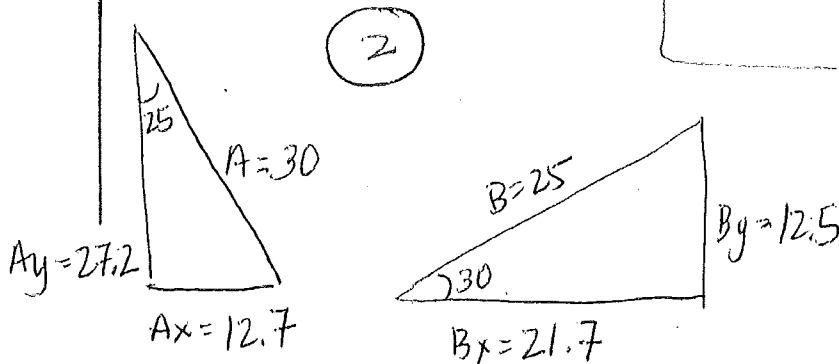
1 cm = 5 km

You travel 30 km at 25° E of S and then 25 km at 30° N of E. Find your displacement:

- a) graphically
- b) by resolution into components



$\vec{R} = (7.4) / 5 =$   
 $R = 37 \text{ km at } 23^\circ \text{ S of E}$



$R_x = A_x + B_x$   
 $(12.7) + (21.7) = 34.4$

$R_y = A_y - B_y$   
 $(27.2 - 12.5) = 14.7$

$R = 37.4 \text{ km at } 23.1^\circ \text{ S of E}$

$R^2 = (34.4)^2 + (14.7)^2$

$R = 37.4$

$\tan \theta = \frac{R_y}{R_x} = \frac{14.7}{34.4} = 23.1^\circ \text{ S of E}$