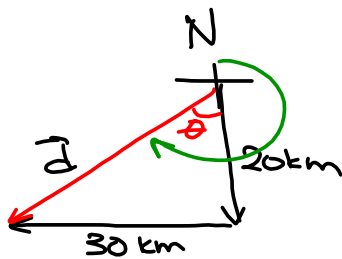


Homework:

5



$$\begin{aligned}
 c^2 &= a^2 + b^2 \\
 &= 30^2 + 20^2 \\
 &= 1300 \\
 c &= 36.1 \text{ km}
 \end{aligned}$$

$$\begin{aligned}
 \tan \theta &= \frac{30 \text{ km}}{20 \text{ km}} \\
 \theta &= 56^\circ
 \end{aligned}$$

$$t = 4.0 \text{ h}$$

$$b) \quad v_{\text{ave}} = \frac{d}{t} = \frac{50 \text{ km}}{4.0 \text{ h}} = 12.5 \frac{\text{km}}{\text{h}}$$

$$\begin{aligned}
 a) \quad \vec{v}_{\text{ave}} &= \frac{\vec{d}}{t} = \frac{36.1 \text{ km } @ 36^\circ}{4.0 \text{ h}} \\
 &= 9.0 \frac{\text{km}}{\text{h}} @ 36^\circ
 \end{aligned}$$

$$\sin 45^\circ = 0.707\dots$$

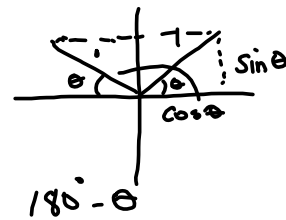
$$\sin^{-1}(0.707\dots) = 45^\circ$$

$$\sin 91^\circ = 0.9998\dots$$

$$\sin^{-1}(0.9998\dots) = 89^\circ \text{ ???}$$

$$2^2 = 4 \quad (-2)^2 = 4$$

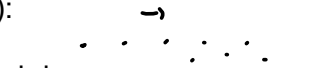
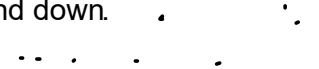
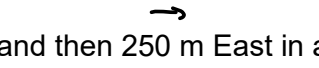
$$\sqrt{4} = \pm 2 \quad \sqrt{4} = \pm 2$$



$$\sin \theta = \sin (180 - \theta)$$

Quiz

1. Draw a dot diagram representing each of the following situations from the point of view of someone standing on the road (3 marks):

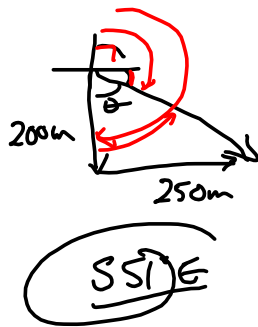
- A. A bus travelling at a constant speed. 
- B. A person (on the bus) tossing a ball up and down. 
- C. The bus speeding up. 

2. Walking around town, you walk 200 m South and then 250 m East in a time of 120 s. (7 marks)

- A. What is the total distance travelled? 450m
- B. What is the total displacement?
- C. What was your average velocity?

3. Is it possible for the average velocity to have a **larger** value than the average speed? Explain. (2 marks)

No. $|\vec{d}| \leq d$



$$c^2 = a^2 + b^2$$

$$c = 320m$$

$$\vec{d} = 320m \ 129^\circ$$

$$\vec{V}_{ave} = 2.7m/s \ 129^\circ$$

$$\tan \theta = \frac{250}{200}$$

$$\theta = 51^\circ$$

$$180^\circ - \theta = 129^\circ$$

Homework: Work on your Problem set

