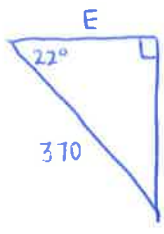
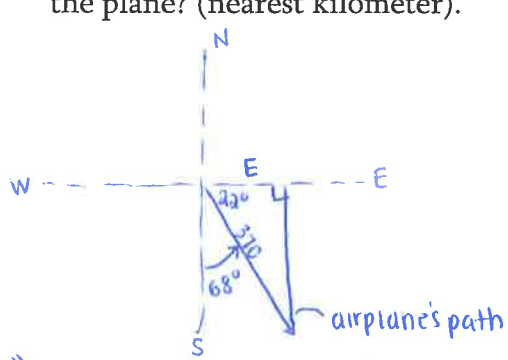


Like #3

1. An airplane travels at 185 km per hour for 2 hours in a direction of S 68° E of Glenview Naval Air Station. At the end of this time, how far east of the Glenview Naval Air Station is the plane? (nearest kilometer).

$\Rightarrow 185 \times 2 = 370 \text{ mi}$

$\Rightarrow 68^\circ \text{ east of south}$



$\frac{\cos 22^\circ}{1} = \frac{E}{370}$

$E = 370 \cos 22^\circ$

$E = 343.1$

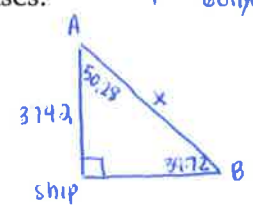
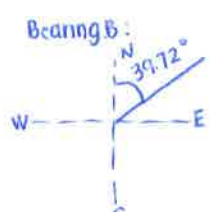
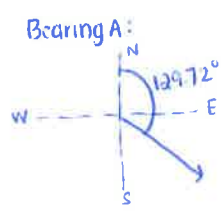
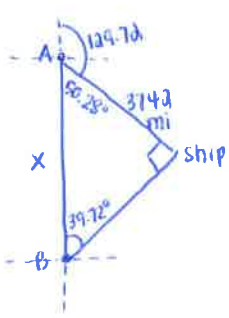
The plane is about 343 km east

Like #4

2. Two lighthouses are located on a north-south line; lighthouse A is north of lighthouse B. From lighthouse A, the bearing of a ship 3,742 meters away is 129° 43'. From lighthouse B, the bearing of the ship is 39° 43'. Find the distance between the lighthouses.

$\Rightarrow \frac{43 \text{ min}}{60 \text{ min}} = 0.7167$

$\Rightarrow \frac{43 \text{ min}}{60 \text{ min}} = 0.7167$



$\frac{\cos 50.28^\circ}{1} = \frac{3742}{X}$

$3742 = X \cdot \cos 50.28^\circ$

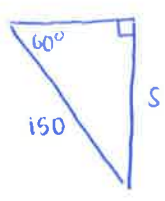
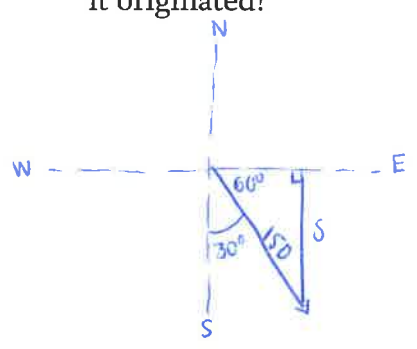
$X = \frac{3742}{\cos 50.28^\circ}$

$X \approx 5855.7$ miles

Like #5

3. An airplane flies on a course of S 30° E for 150 km. How far south is the plane from where it originated?

$\Rightarrow 30^\circ \text{ east of south}$



$\frac{\sin 60^\circ}{1} = \frac{S}{150}$

$S = 150 \sin 60^\circ$

$S = 129.9$

The plane is about 129.9 km south

Like #2

4. Jean travels to school each day by walking 200 meters due East, and then turning left and walking 100 meters due North. If she had walked in a straight line from home to school, what would the bearing angle be from her home to school? From her school to home?

Home to school: **N 63.4° E**

School to home: **S 63.4° W**

$\tan \theta = \frac{100}{200}$

$\theta = \tan^{-1} \left(\frac{100}{200} \right)$

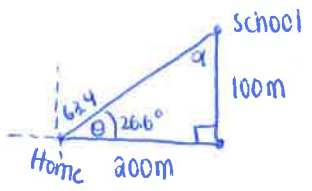
$\theta = 26.6^\circ$

$90 - 26.6 = 63.4$

$\tan \alpha = \frac{200}{100}$

$\alpha = \tan^{-1} \left(\frac{200}{100} \right)$

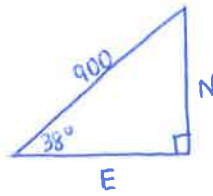
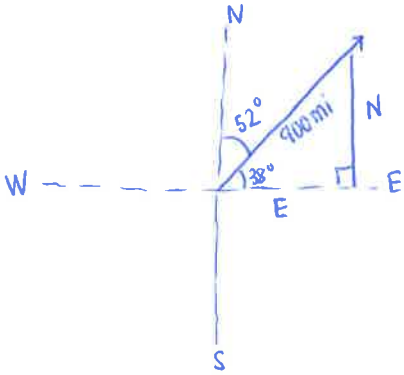
$\alpha = 63.4$



Like #6

$$\rightarrow 1.5 \times 600 = 900 \text{ mi}$$

5. An airplane flying at 600 miles per hour has a bearing of 52° . After flying for 1.5 hours, how far north and how far east has the plane traveled from its point of departure?



$$\frac{\sin 38}{1} = \frac{N}{900}$$

$$\frac{\cos 38}{1} = \frac{E}{900}$$

$$N = 900 \sin 38$$

$$E = 900 \cos 38$$

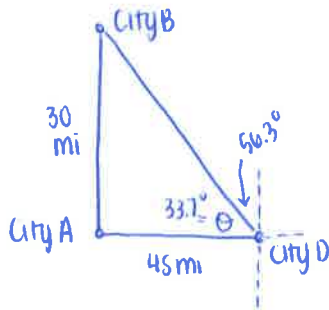
$$N = 554.1$$

$$E = 709.2$$

The plane is 554.1 miles north and 709.2 miles east

Like #2

6. City A is 30 miles due South of City B. City D is 45 miles due east of City A. What is the bearing of City B from City D? (nearest tenth of a degree)



$$\tan \theta = \frac{30}{45}$$

$$\theta = \tan^{-1}\left(\frac{30}{45}\right)$$

$$\theta = 33.7^\circ$$

$$90 - 33.7 = 56.3$$

N 56.3° W

Answers:

1) 343.1 km 2) 5858.2 mi 3) 129.9 km 4) Home to School : N 63.4° E ; School to Home S 63.4° W

5) 709.2 mi east ; 554.1 mi north 6) N 56.3° W