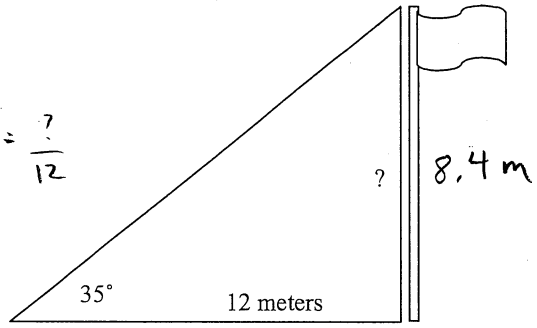
Free Particle Model

Trigonometry Practice Problems

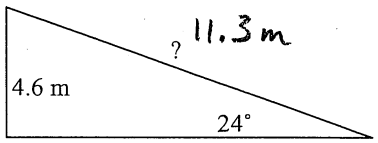
Find the magnitude of the side or the angle indicated with a "?" for each of the following triangles:

1.



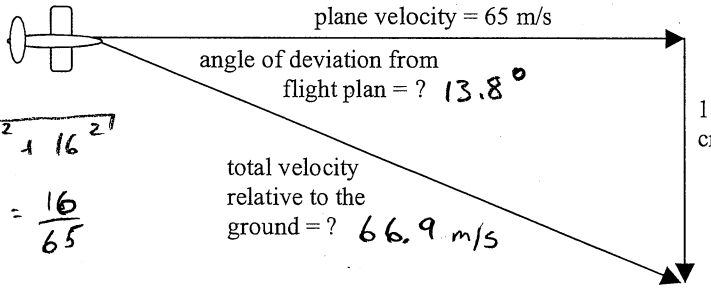
$\tan 35 = \frac{?}{12}$

2.



$\sin 24 = \frac{4.6}{?}$

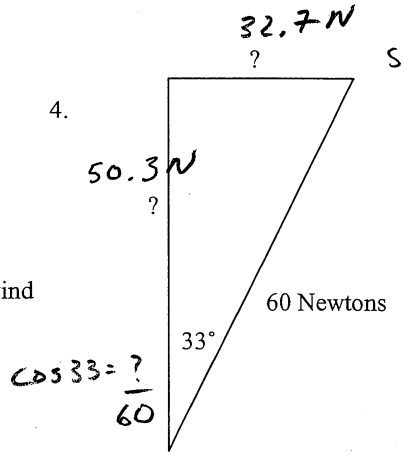
3.



$\sqrt{65^2 + 16^2}$

$\tan\theta = \frac{16}{65}$

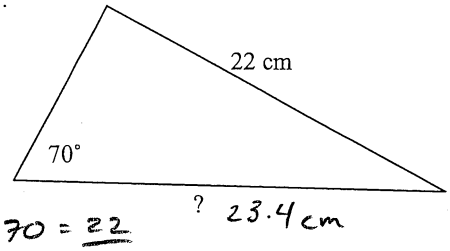
4.



$\sin 33 = \frac{?}{60}$

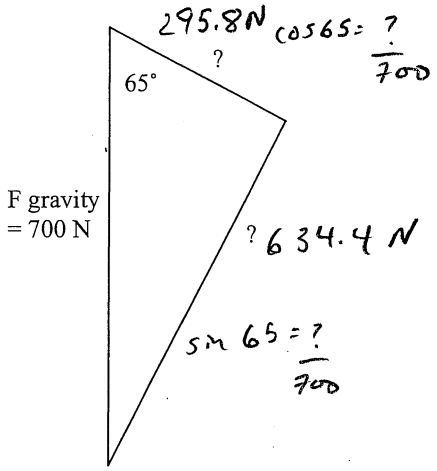
$\cos 33 = \frac{?}{60}$

5.



$\sin 70 = \frac{22}{?}$

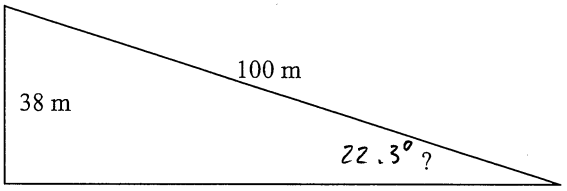
6.



$\cos 65 = \frac{?}{700}$

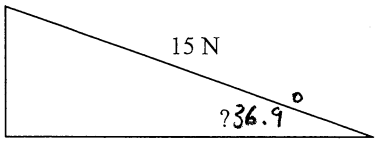
$\sin 65 = \frac{?}{700}$

7.



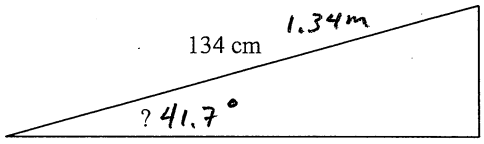
$\sin ? = \frac{38}{100}$

8.



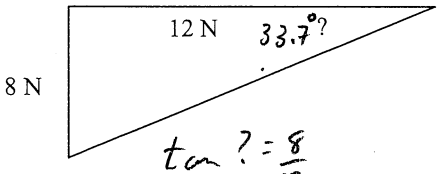
$\cos ? = \frac{12}{15}$

9.



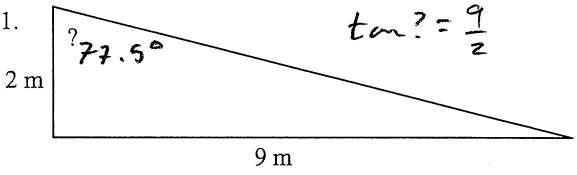
$\cos ? = \frac{1}{1.34}$

10.



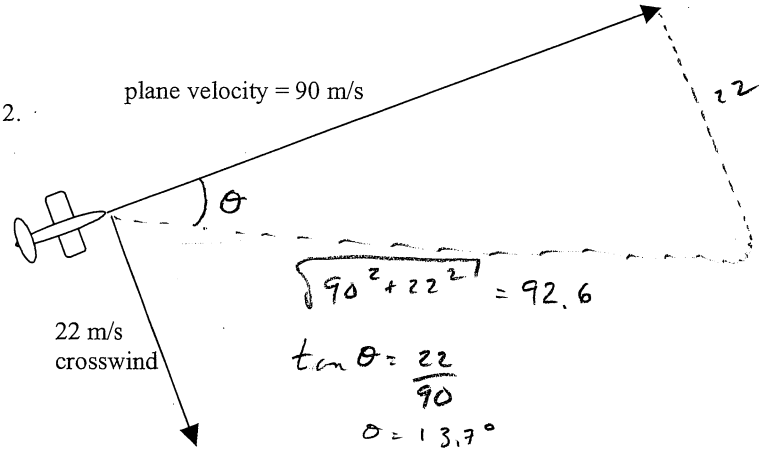
$\tan ? = \frac{8}{12}$

11.



$\tan ? = \frac{9}{2}$

12.



$\sqrt{90^2 + 22^2} = 92.6$

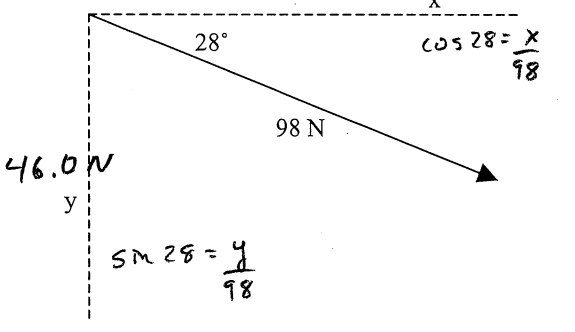
$\tan\theta = \frac{22}{90}$

$\theta = 13.7°$

total velocity relative to the ground = ? 92.6 m/s

angle of deviation from flight plan = ? 13.7°

13. Find the x and y components of the given force vector.



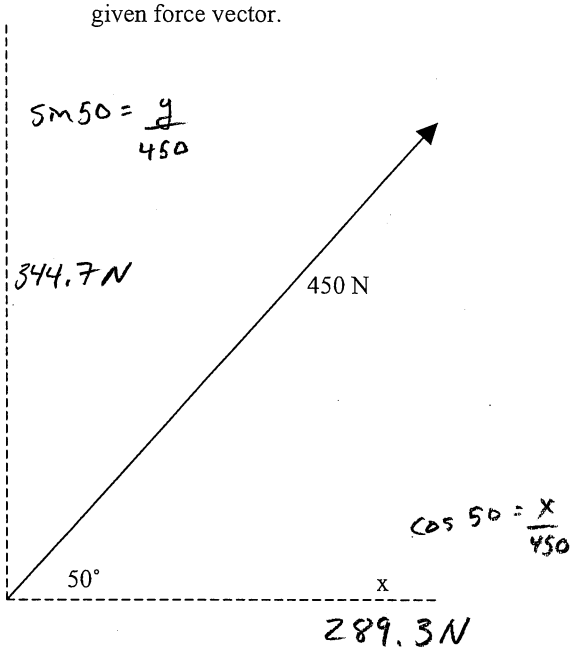
x: 86.5 N

$\cos 28 = \frac{x}{98}$

y:

$\sin 28 = \frac{y}{98}$

14. Find the x and y components of the given force vector.



$\sin 50 = \frac{y}{450}$

$\cos 50 = \frac{x}{450}$

289.3 N