

Section 7.9 (last one!): Right Triangle Apps

Standard Right Triangle

$$B = 40^\circ \quad A = 50^\circ$$

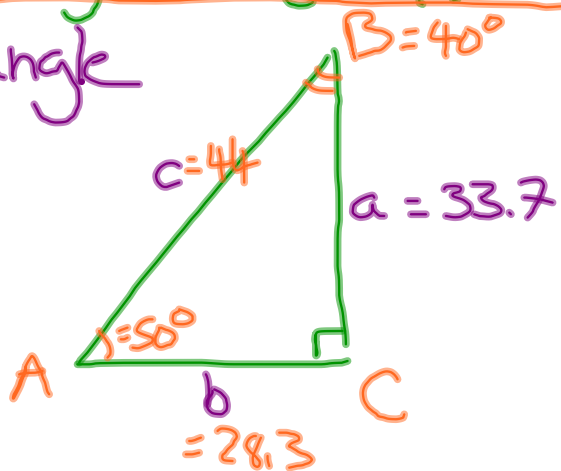
$$c = 44$$

$$\sin 50^\circ = \frac{a}{44}$$

$$44 \sin 50^\circ = a = 33.7$$

$$\cos 50^\circ = \frac{b}{44}$$

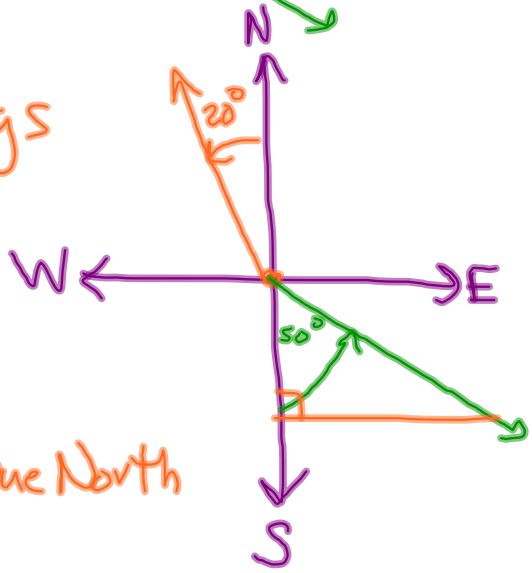
$$44 \cos 50^\circ = b = 28.3$$



Angle of Elevation 

Angle of Depression 

Navigation Bearings
Deflection from
due N. or S.



N 20° W

20° West of Due North

S 50° E

50° East of Due South

Simple Harmonic Motion (SHM)

- A point that moves on a graph is in SHM if its distance from the origin at time t is...

$$d = \underline{a} \sin \underline{\omega t} \quad d = a \cos \omega t$$

$|a|$ = amplitude also called maximum displacement

$$\frac{2\pi}{\omega} = \text{Period} \quad \text{seconds/cycle}$$

$$\frac{\omega}{2\pi} = \text{Frequency} \quad \text{cycles/second}$$

$$\underline{d} = \frac{1}{16} \sin \underline{120\pi t}$$

$$\text{amp} = \frac{1}{16}$$

$$\text{per} = \frac{2\pi}{120\pi} = \frac{1}{60} \text{ seconds/cycle}$$

$$\text{freq} = \frac{120\pi}{2\pi} = 60 \text{ cycles/sec.}$$