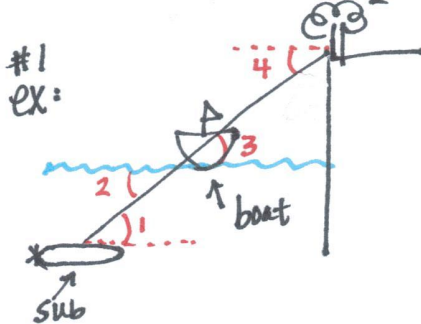
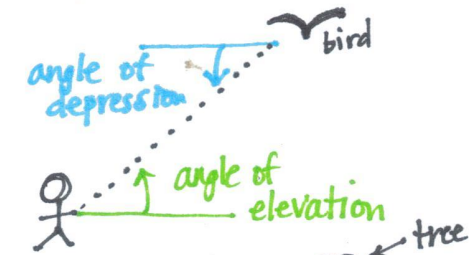


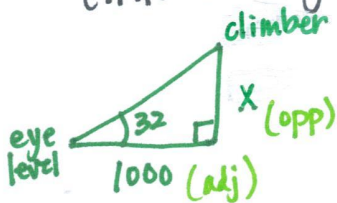
Angles of Elevation & Depression (Section 11-4)

* Angle of Elevation: from ^{the} horizontal to an object in the air
 Angle of Depression: from ^{the} object to something on the ground.



#1 ex: describe each angle.
 $\angle 1$: angle of elevation from sub to tree/boat
 $\angle 2$: angle of depression from boat to sub
 $\angle 3$: angle of elevation from boat to tree
 $\angle 4$: angle of depression from tree to boat/sub

Got it?
 ex: rock climber @ 32° angle of elevation.
 Your eye level is 6ft above the ground &
 you are 1000 ft from the base of the
 cliff. How high up is the climber?



$$\frac{\text{opp}}{\text{adj}} = \tan A$$

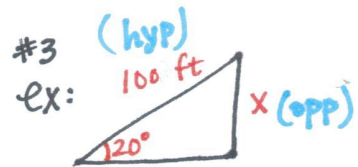
$$\frac{X}{1000} = \tan 32^\circ$$

$$X = 1000 \cdot \tan 32^\circ$$

$$X = 624.87 \text{ ft}$$

$$+ 6$$

630.87 ft high



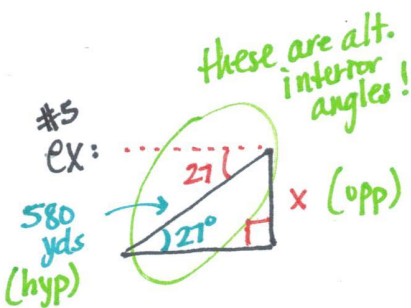
#3 ex:

$$\frac{\text{opp}}{\text{hyp}} = \sin A$$

$$\frac{X}{100} = \sin 20^\circ$$

$$X = 100 \cdot \sin 20^\circ$$

X = 34.2 ft



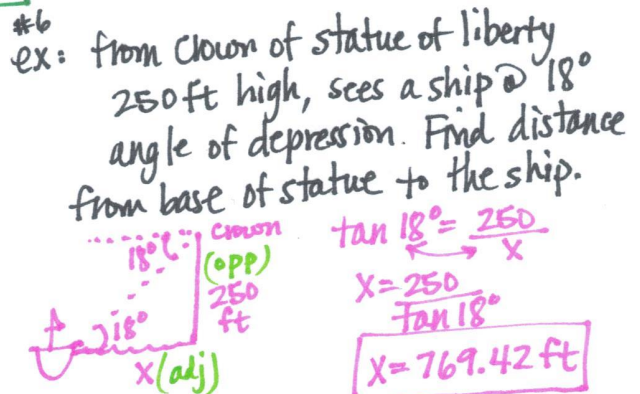
#5 ex:

$$\frac{\text{opp}}{\text{hyp}} = \sin A$$

$$\frac{X}{580} = \sin 27^\circ$$

$$X = 580 \cdot \sin 27^\circ$$

X = 263.3 yds



#6 ex: from Clowm of statue of liberty 250 ft high, sees a ship @ 18° angle of depression. Find distance from base of statue to the ship.

$$\tan 18^\circ = \frac{250}{X}$$

$$X = \frac{250}{\tan 18^\circ}$$

X = 769.42 ft