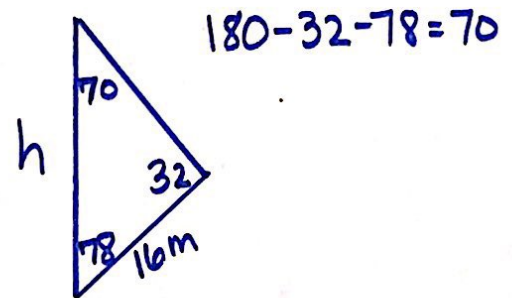
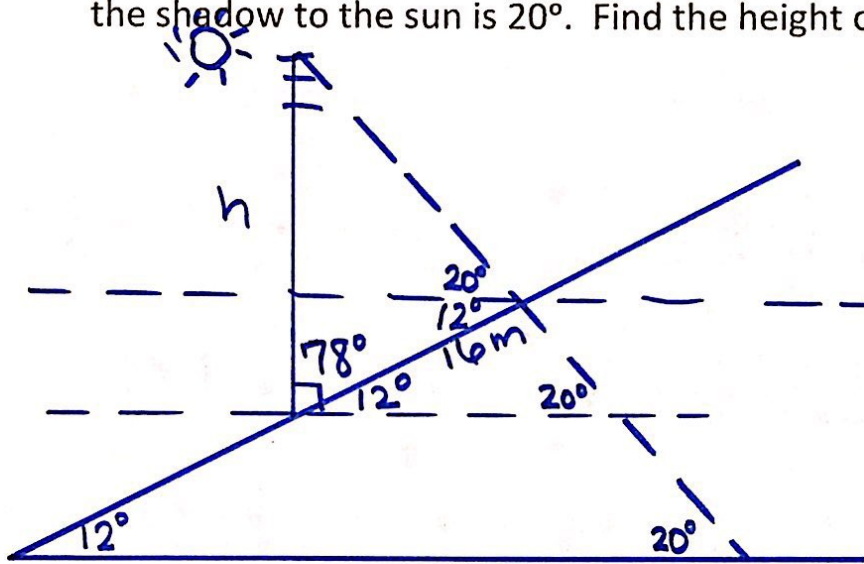


## Law of Sine/Cosine Application Examples:

LOC: SSS OR SAS

LOS for anything else

1. A telephone pole at a right angle to the horizontal is located on a slope that makes an angle of  $12^\circ$  with the horizontal. The pole's shadow is 16 meters long and points directly up the slope. The angle of elevation from the tip of the shadow to the sun is  $20^\circ$ . Find the height of the telephone pole?

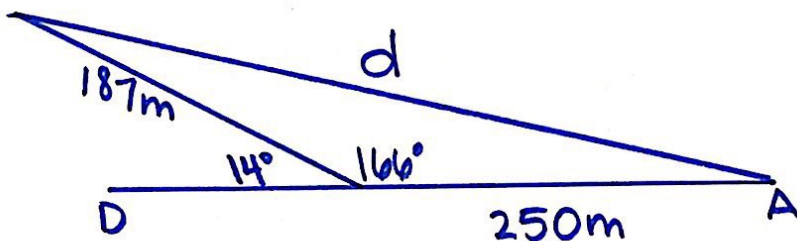


$$\frac{\sin 70}{16} = \frac{\sin 32}{h}$$

$$h \sin 70 = 16 \sin 32$$

$$\boxed{h = 9.02 \text{ m}}$$

2. A plane leaves Atlanta on a direct flight to Dallas, TX. After going 250 miles due west, the plane encounters the remnants of a Hurricane off the Gulf of Mexico and is told to turn North  $14^\circ$  and continue for another 187 miles where it can land safely. How far is the plane from its original location?



$$d^2 = 187^2 + 250^2 - 2(187)(250)\cos 166$$

$$\sqrt{d^2} = \sqrt{188191.6504}$$

$$\boxed{d = 433.81 \text{ m}}$$