

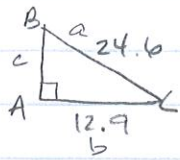
Key

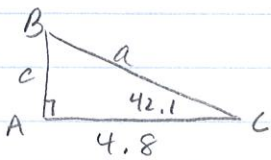
Right Triangles WS ±

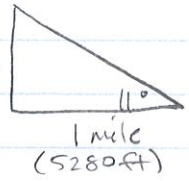
1. $\sin 43^\circ 19' 51'' = \boxed{.6862}$

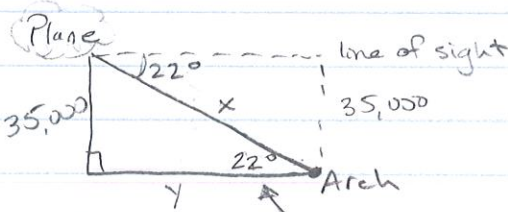
2. $\sec 129^\circ = \frac{1}{\cos 129^\circ} = \boxed{-1.589}$

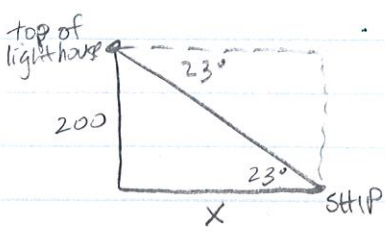
3. $\tan(-216.73^\circ) = \boxed{-.7462}$

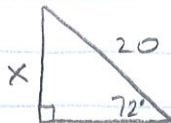
4.  $c^2 + 12.9^2 = 24.6^2$ $\cos C = \frac{12.9}{24.6}$ $\angle B = 90 - 58.4$
 $c^2 = 438.75$ $C = \cos^{-1}\left(\frac{12.9}{24.6}\right)$ $= \boxed{31.6^\circ}$
 $C = \boxed{20.9}$ $\angle C = \boxed{58.4^\circ}$

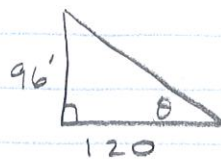
5.  $\angle B = 90 - 42.1$ $\cos 42.1 = \frac{4.8}{a}$ $\tan 42.1 = \frac{c}{4.8}$
 $\angle B = \boxed{47.9}$ $a \cos 42.1 = 4.8$ $c = \boxed{4.3}$
 $a = \frac{4.8}{\cos 42.1}$
 $a = \boxed{6.5}$

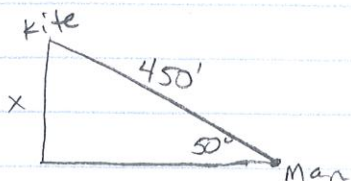
6.  $5280 \text{ ft} = 1 \text{ mile}$
 $\tan 11^\circ = \frac{x}{5280}$
 $5280 \tan 11^\circ = x$ $x = \boxed{1,026.3 \text{ feet}}$

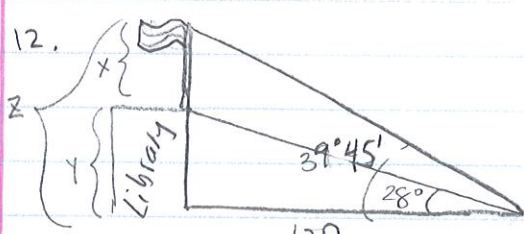
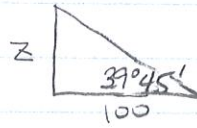

7.  Plane Arch line of sight
 a) $\sin 22^\circ = \frac{35000}{x}$ $x \sin 22^\circ = 35000$ $x = \frac{35000}{\sin 22}$ $x = \boxed{93,431.4 \text{ ft.}}$
 b) $\tan 22^\circ = \frac{35000}{y}$ $y \tan 22^\circ = 35000$ $y = \frac{35000}{\tan 22}$ $y = \boxed{86,628 \text{ ft.}}$
 Alternate Interior \angle 's

8.  top of lighthouse SHIP
 $\tan 23^\circ = \frac{200}{x}$
 $x \tan 23^\circ = 200$
 $x = \frac{200}{\tan 23}$
 $x = \boxed{471.2 \text{ feet}}$


9.  $\sin 72^\circ = \frac{x}{20}$
 $20 \sin 72 = x$ $x = 19 \text{ feet}$

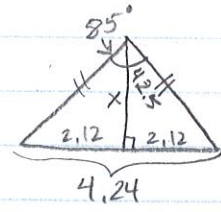
10.  $\tan \theta = \frac{96}{120}$
 $\theta = \tan^{-1} \frac{96}{120}$ $\theta = 38.7^\circ$

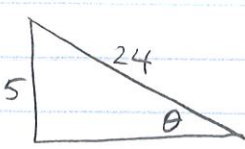
11.  $\sin 50 = \frac{x}{450}$
 $450 \sin 50 = x$ $x = 344.7 \text{ feet}$

12.   
 $\tan 39^\circ 45' = \frac{z}{100}$ $\tan 28 = \frac{y}{100}$
 $100 \tan 39^\circ 45' = z$ $100 \tan 28 = y$
 $z = 83.2$ $y = 53.2$

Height of flag pole = $83.2 - 53.2 = 30 \text{ feet}$ 30 feet

13.  $\sin 60^\circ = \frac{5}{x}$
 $x \sin 60 = 5$
 $x = \frac{5}{\sin 60}$ $x = 5.8 \text{ cm}$

14.  $\tan 42.5 = \frac{2.12}{x}$
 $x \tan 42.5 = 2.12$
 $x = \frac{2.12}{\tan 42.5}$ $x = 2.3 \text{ feet}$

15.  $\sin \theta = \frac{5}{24}$
 $\theta = \sin^{-1} \frac{5}{24}$
 $\theta = 12^\circ$