

$$\tan 17^\circ = \frac{1150}{x}$$

$$0.3057x = 1150$$

$$0.3057 \quad 0.3057$$

$$x = 3761.5m$$

$$\sin 17^\circ = \frac{1150}{x}$$

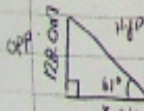
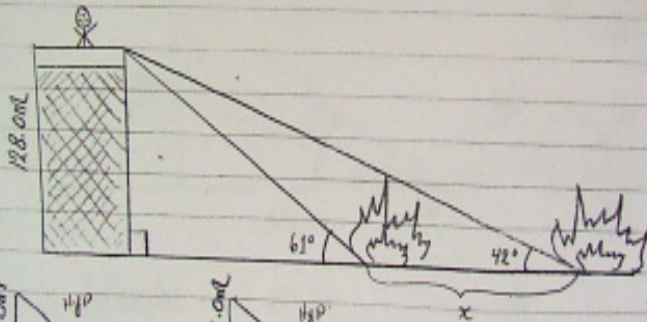
$$0.2924x = 1150$$

$$0.2924 \quad 0.2924$$

$$x = 3933.3m$$

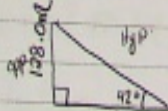
- The horizontal distance is 3761.5m.
- The distance btw the plane and the tower 3933.3m.

✓ #2.



$$\tan 61^\circ = \frac{128}{x}$$

$$x = 70.1m$$



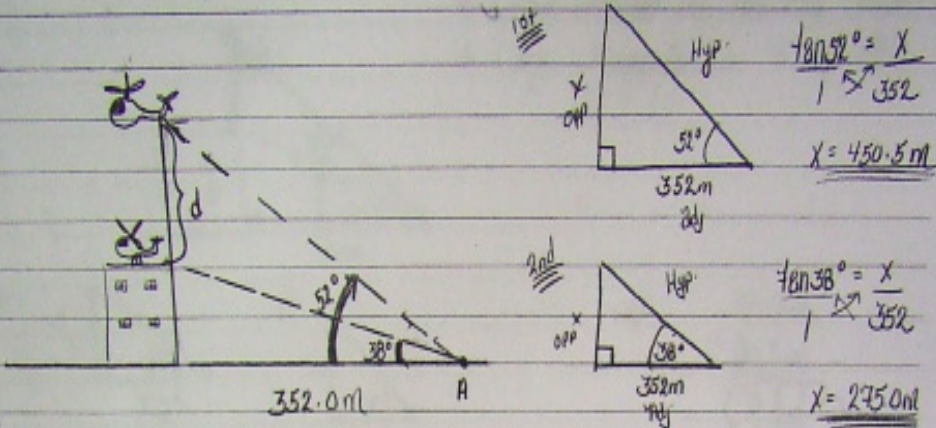
$$\tan 42^\circ = \frac{128}{x}$$

$$x = 142m$$

\* The distance  
 142.2m btw the  
 - 70.1m fires is  
 72.1m  
 = 72.1m

\* The building is 64m tall

✓ #4.



\* The helicopter rised 175.5m

Above the building.

3rd

$$450.5 \text{ m} - 275.0 \text{ m} = 175.5 \text{ m}$$

$X = 70.1 \text{ m}$

$X = 142 \text{ m}$

#5

56.0m

58°

62°

1st

2nd

3rd

$x$

$x$

$x$

56.0m

56.0m

$\tan 58^\circ = \frac{x}{56.0}$

$x = 89.6 \text{ m}$

$\tan 62^\circ = \frac{x}{56.0}$

$x = 105.3$

105.3 m

- 89.6 m

15.7 m

\* The flagpole is 15.7m long.

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#6

100m

31°

\* The school is 80.9m high.

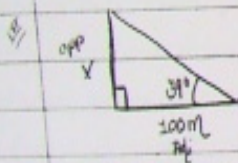
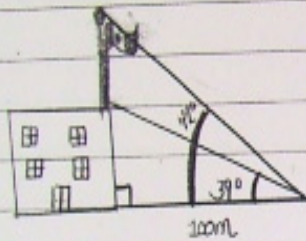
\* The flagpole is 9.1m tall.

$$X = \underline{\underline{89.6m}} \quad X = \underline{\underline{105.3}}$$

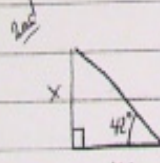
\* The flagpole is 15.7m long.

✓ #6.

\* The school is 80.9m high.  
\* The flagpole is 9.1m tall.



$$\frac{\tan 39^\circ = X}{100} \quad X = 80.9m$$



$$\frac{\tan 42^\circ = X}{100} \quad X = 90.0m$$

$$\begin{array}{r} 90.0m \\ - 80.9m \\ \hline 9.1m \end{array}$$

of depression from  
150m higher than the  
is the horizontal dis  
is the actual distance  
tower in a tower 128  
depression of 42° so  
window 26.0m above  
39°, while the angle  
e building?  
ter directly on top of  
n of 38°. The helioo  
, and sights position  
n from the building.  
: of elevation to the t  
of the building. The  
is 62°. What is the le  
aint 100m from the fi  
f the building's flags  
late the height of the  
late the length of the  
top of a cliff 70m hig  
1.3°. Calculate the c  
the bottom of the cliff  
en the boats.

Answer Key

#7.

1st

70m

13°

x

2nd

70m

8°

x

3rd

$$\frac{70}{x} = \tan 13^\circ$$

$$0.2309x = 70$$

$$\frac{70}{0.2309} = x$$

$$x = 303.2m$$

$$\frac{70}{x} = \tan 8^\circ$$

$$0.1405x = 70$$

$$\frac{70}{0.1405} = x$$

$$x = 498.1$$

498.1 m  
- 303.2 m  
= 194.9 m