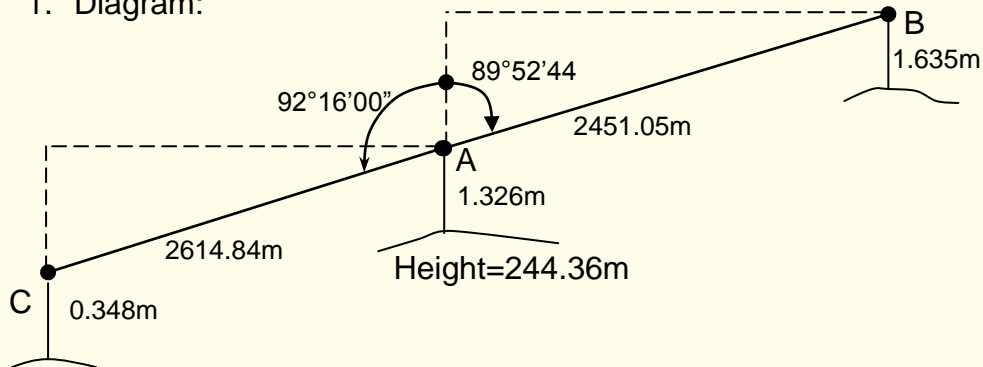


MATHEMATICS ANSWERS

Level Two

Trig Heights #4

1. Diagram:



2. A to B $\frac{h}{2451.05} = \sin(89^{\circ}52'44'')$

$$h = 2451.04\text{m}$$

A to C $h = \cos(2^{\circ}16'00'') \times 2614.84\text{m}$

$$h = 2612.79\text{m}$$

3. Change in height A to B:

$$\cos(89^{\circ}52'44'') \times 2541.05 = 5.181$$

$$5.181 + 1.326 - 1.635 = 4.872 \text{ (change in height between A and B)}$$

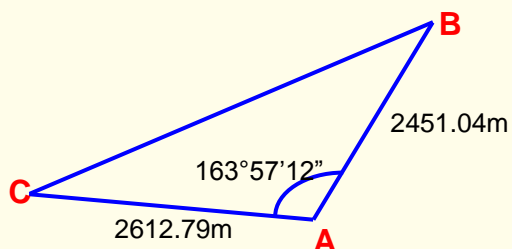
Change in height A to C:

$$\sin(2^{\circ}16'00'') \times 2614.84 = 103.418$$

$$-103.418 + 1.326 - 0.348 = -102.440\text{m} \text{ (change in height between A and C)}$$

$$4.872 + 102.44 = 107.312\text{m}$$

5. Elevation A = 244.36 \Rightarrow B = 249.232m mean sea level
 \Rightarrow C = 141.92m mean sea level



6. $a^2 = b^2 + c^2 - 2bccosA$

$$a^2 = (2612.79)^2 + (2451.04)^2 - 2 \times 2612.79 \times 2541.04 \times \cos(163^{\circ}57'12'')$$

$$a = 5014.313$$

$$\Rightarrow \text{BC} = 5014.313\text{m long}$$

