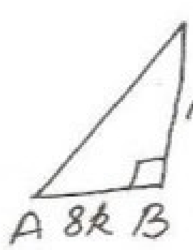
(4) $15 \cot A = 8$

$\Rightarrow \cot A = \frac{8}{15}$ $\left(\frac{a.s.}{o.s.}\right)$



let $AB = 8k$

$BC = 15k$

In rt $\triangle ABC$

$AC^2 = AB^2 + BC^2$ (py. th.)

$= (8k)^2 + (15k)^2$

$= 64k^2 + 225k^2$

$= 289k^2$

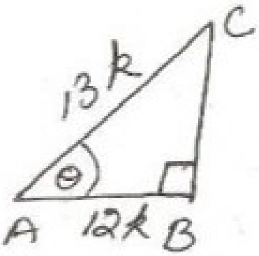
$AC = \sqrt{289k^2}$

$= 17k$

$\sin A = \frac{15\cancel{k}}{17\cancel{k}}$

$\sec A = \frac{17\cancel{k}}{8\cancel{k}}$

(5) $\sec \theta = \frac{13}{12}$ $\left(\frac{h}{a.s.}\right)$



let $AC = 13k$

$AB = 12k$

In rt. $\triangle ABC$

$BC^2 = AC^2 - AB^2$ (py th.)

$= (13k)^2 - (12k)^2$

$= 169k^2 - 144k^2$

$= 25k^2$

$BC = \sqrt{25k^2}$

$= 5k$

$\sin \theta = \frac{5\cancel{k}}{13\cancel{k}}$

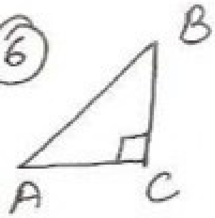
$\cos \theta = \frac{12\cancel{k}}{13\cancel{k}}$

$\tan \theta = \frac{5\cancel{k}}{12\cancel{k}}$

$\cot \theta = \frac{12\cancel{k}}{5\cancel{k}}$

$\operatorname{cosec} \theta = \frac{13\cancel{k}}{5\cancel{k}}$

(6) [Case 1 - Same $\triangle$]



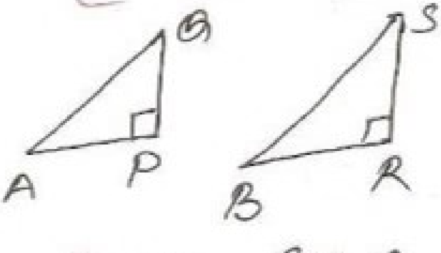
$\cos A = \cos B$

$\frac{AC}{\cancel{AB}} = \frac{BC}{\cancel{AB}}$

$\Rightarrow AC = BC$

$\Rightarrow \angle B = \angle A$ $\left(\text{isos. } \triangle \text{ prop}\right)$

[Case 2 - Same $\triangle$]



$\cos A = \cos B$

$\frac{AP}{AQ} = \frac{BR}{BS}$

using alternendo

$\frac{AP}{BR} = \frac{AQ}{BS}$

and $\angle P = \angle R = 90°$

$\therefore \triangle APQ \sim \triangle BRS$ by RHS prop

$\Rightarrow \angle A = \angle B$