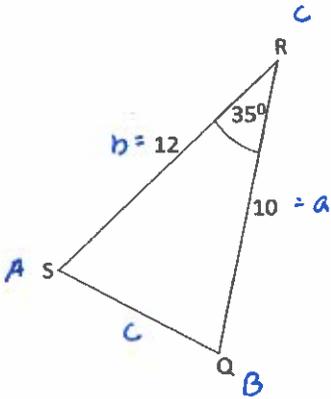


151 - Law of Cosine Law

Q1: Determine the length of QS. (1 mark)



$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$c^2 = 10^2 + 12^2 - 2(10)(12) \cos 35$$

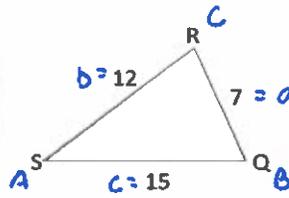
$$c^2 = 100 + 144 - 196.6$$

$$c^2 = 47.4$$

$$c = 6.9$$

QS = 6.9

Q2: Determine the measure of $\angle R$. (1 mark)



$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$15^2 = 7^2 + 12^2 - 2(7)(12) \cos C$$

$$225 = 49 + 144 - 168 \cos C$$

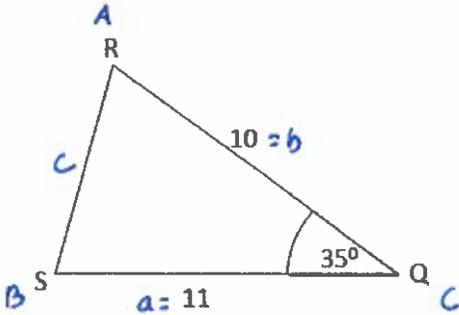
$$32 = -168 \cos C$$

$$-0.19 = \cos C$$

$$\angle C = 101^\circ$$

$\angle R = 101^\circ$

Q3: Solve the triangle. (3 marks)



$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$c^2 = 11^2 + 10^2 - 2(11)(10) \cos 35$$

$$c^2 = 121 + 100 - 180.2$$

$$c^2 = 40.8$$

$$c = 6.387$$

RS = 6.387

$$\frac{\sin C}{c} = \frac{\sin A}{a}$$

$$\frac{\sin 35}{6.387} = \frac{\sin A}{11}$$

$$\sin A = 0.9878$$

$$\angle A = 81.1^\circ$$

$\angle R = 81.1^\circ$

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\angle B = 63.9^\circ$$

$\angle S = 63.9^\circ$

MARKING:

Beginning	0.0 - 2.0
Progressing	2.5 - 3.5
Competent	4.0 - 4.5
Exemplary	5.0