

Question	Scheme	Marks	AOs
7 (a)	Sets $50 = 7 \times 14 \sin(\angle SPQ)$ oe	B1	1.2
	Finds $180^\circ - \arcsin\left(\frac{50}{98}\right)$	M1	1.1b
	$= 149.32^\circ$	A1	1.1b
		(3)	
(b)	Method of finding SQ $SQ^2 = 14^2 + 7^2 - 2 \times 14 \times 7 \cos 149.32^\circ$	M1	1.1b
	$= 20.3 \text{ cm}$	A1	1.1b
		(2)	

(5 marks)

Alt(a)	States or uses $14h = 50$ or $7h_1 = 50$	B1	1.2
	Full method to find obtuse $\angle SPQ$. In this case it is $90^\circ + \arccos\left(\frac{h}{7}\right)$ or $90^\circ + \arccos\left(\frac{h_1}{14}\right)$	M1	1.1b
	awrt 149.32°	A1	1.1b

Notes

(a)

B1: Sets $50 = 7 \times 14 \sin(\angle SPQ)$ oe

M1: Attempts the correct method of finding obtuse $\angle SPQ$. See scheme.

A1: awrt 149.32°

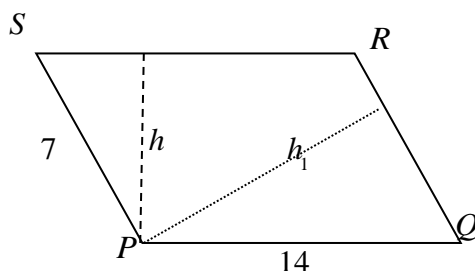
(b)

M1: A correct method of finding SQ using their $\angle SPQ$.

$SQ^2 = 14^2 + 7^2 - 2 \times 14 \times 7 \cos 149.32^\circ$ scores this mark.

A1: awrt 20.3 cm (condone lack of units)

Alt(a)



B1: States or uses $14h = 50$ or $7h_1 = 50$

M1: Full method to find obtuse $\angle SPQ$.

In this case it is $90^\circ + \arccos\left(\frac{h}{7}\right)$ or $90^\circ + \arccos\left(\frac{h_1}{14}\right)$

A1: awrt 149.32°