Assessment Schedule – 2005

Mathematics: Solve right-angled triangle problems (90152)

Evidence Statement

THE SLEEP-OUT

	Achievement Criteria	Q	Evidence	Code	Judgement	Sufficiency
Achievement	Solve right-angled triangle problems.	1(a)	**QR** $= \sqrt{(2.1^2 - 0.75^2)} = 1.9615$ m	AP	Units not required in Achievement. Allow any level of rounding / truncation in Achievement.	**Achievement:** 3 × code A (at least 1 of AP and 1 of AT).
		1(b)	**SR** $= 2.1\cos 70° = 0.71824$ m	AT		
		2(a)	**HC** $= \sqrt{1.9^2 + 2.6^2} = 3.220248$ m	AP		
		2(b)	$\angle$**EHD** $= \tan^{-1}\left(\frac{1.2}{2.8}\right) = 23.19859°$	AT		
Achievement with Merit	Solve problems in practical situations involving right-angled triangles.	2(c)	$\angle$**KFG** $= \cos^{-1}\left(\frac{2.8}{3.03}\right) = 22.468106°$	AT	Units not required in Merit. Allow any level of rounding / truncation in Merit. Correct mathematical statements are expected at Merit: penalise IMS each time it occurs.	**Achievement EITHER** As for Achievement **plus** 3 × code M **OR** 3 × code M
			$\angle$**HKF** $= 112.5°$	M		
		2(d)	**AJ** $= \sqrt{2.8^2 + 1.2^2} = 3.046$ m	AP		
			DJ $= \sqrt{(2.8^2 + 2.6^2 + 1.2^2)} = 4.005$ m	M		
		3	**XA** $= \frac{3.1}{\sin 75°} = 3.209356$ m	AT/M		
Achievement with Excellence	Solve problems in word or 3D situations.	4	Southern horizontal component = $9\tan 32 = 5.6238$ m per s. Eastern horizontal component = $9\tan 51 = 11.11407$ m per s. Wind speed = 12.4559 m per s.	AT AT M/E	Majority of mathematical statements correct. Rounding / truncating should be correct and sensible in the majority of cases. Units should be given at least once. Other methods are acceptable. A consistent Pythagoras calculation of the wind speed for incorrect components is evidence for Merit.	**Achievement with Excellence:** As for Merit **plus** code E

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Solve right-angled triangle problems. 3 × A (including at least one of AP and one of AT)	Solve problems in practical situations involving right-angled triangles. **Achievement** *plus* 3 × M *or* 3 × M	Solve problems in word or 3D situations. **Merit** *plus* 1 × E