Question Number	Answer	Mark
19(a)	Use of moment = $F x$ **(1)** Anticlockwise moment = 25.2 (Nm) **and** (maximum) clockwise moment = 24.2 (Nm) **(1)** As angle to the ground increases, clockwise moment from the weight decreases **Or** **(1)** If line of action of weight moves outside base cannot regain equilibrium. **(1)** 25.2 > 24.2 ∴ blows over <u>Example of calculation</u> moment from wind = 14 N × 1.8 m = 25.2 N m moment from weight = 110 N × 0.22 m = 24.2 N m 25.2 > 24.2 ∴ blows over	**4**
19(b)	Horizontal component = T × sin 44° **Or** Distance to line of action of T = 1.5 × sin 44° **(1)** Equates clockwise to anticlockwise moments about centre of base to determine T **(1)** Use of trigonometry to calculate vertical component of tension **(1)** Adds weight to vertical component Force exerted on the ground = 141 N **(1)** **(1)** <u>Example of calculation</u> Horizontal component of tension = T × sin 44° CWM = 1.5 m × T × sin 44° = 1.04 m × T ACWM = 25 N × 1.8 m = 45.0 N m 1.04 m × T = 45.0 N m T = 45.0 N m ÷ 1.04 m = 43.2 N Vertical component of T = 43.2 N × cos 44° = 31.1 N Total downward force = 110 N + 31.1 N = 141.1 N	**5**
	Total for question 19	**9**