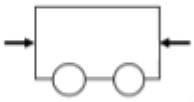
Q1.

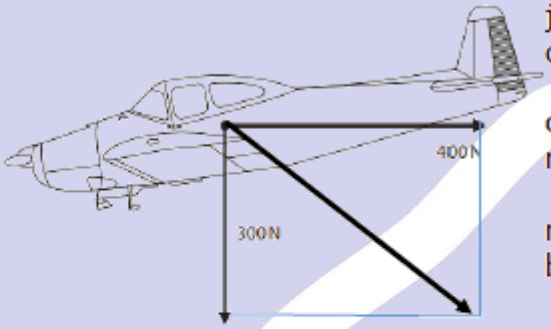
Question number	Answer	Mark
	B  A, C and D are incorrect because they all show a resultant force which would cause the trolley to accelerate	**(1)**

Q2.

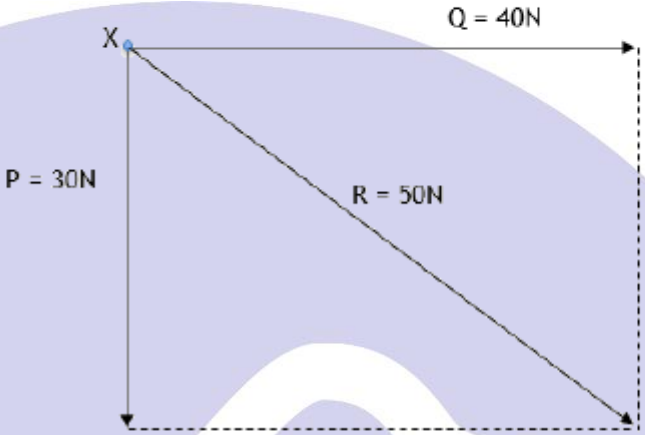
Question Number	Answer	Acceptable answers	Mark
(iii)	Arrow pointing (vertically) upwards (1) Value of 1.2 (N) (written near to arrow) (1)	Marks are independent of each other	**(2)**

Q3.

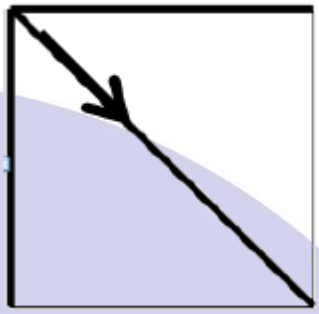
Question Number:	Answer	Additional guidance	Mark
(i)	0.9 (k N) (1) up / upwards / ascending (1)	accept .9 or 0.90 north N ↑	**(2)** AO 3 2a AO 3 2b

Question Number:	Answer	Additional guidance	Mark
(ii)		judge length and direction by eye construction lines need not be shown magnitude need not be stated allow missing arrowhead if direction and length are correct reject answers which have any additional vectors drawn	**(1)** AO 3 2b

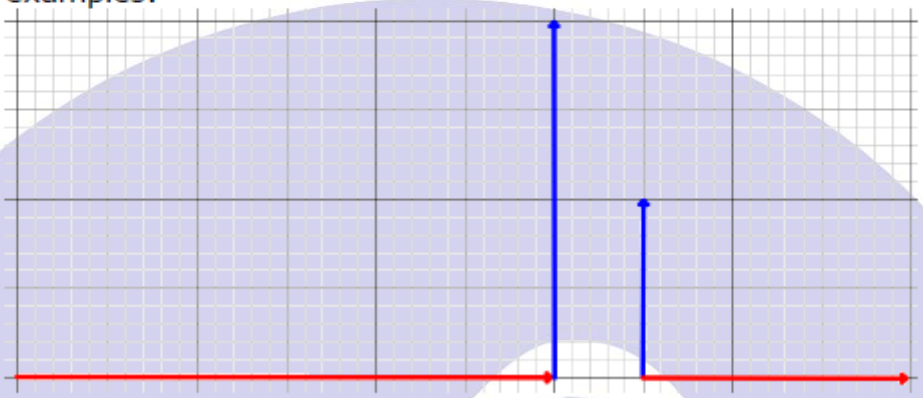
Q4.

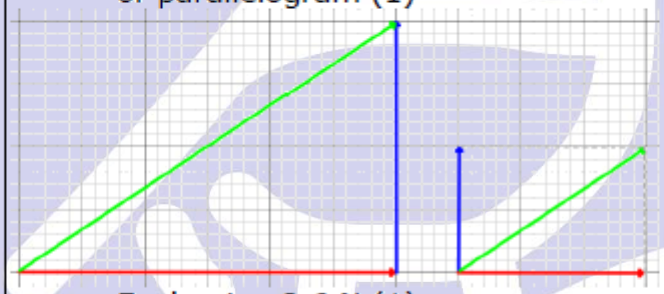
Question number	Answer	Additional guidance	Mark
		independent marks	**(2)** **A01**
	arrow (any length) (labelled R) in correct direction (judge by eye) (1)	 construction lines need not be shown arrow head must be present for MP1	
	(size of R =) 50N (1)	accept answers in range 48N to 52N obtained from scale drawing working need not be shown	

Q5.

Question number	Answer	Additional guidance	Mark
	Scale drawing two lines at right angles (1) a correct scaling (for example 10kN equivalent to 1 cm) / a completed square or triangle(1) diagonal in correct direction (1) 28 kN (1)	 judge by eye accept answers from 25 kN to 30 kN accept use of Pythagoras award full marks for correct answer without working.	**(4)**

Q6.

Question number	Answer	Mark
(i)	• two vector arrows at rights angles representing the forces (1) • two vector arrows in proportion (1) examples: 	(2)

Question number	Answer	Additional guidance	Mark
(ii)	• drawing shows a completed triangle or parallelogram (1)  • Evaluation 3.6 N (1)	±0.2 N may be calculated using Pythagoras theorem	(2)