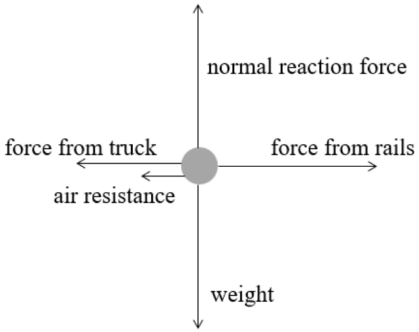
Question Number	Answer		Mark
18(a)	Force from truck to the left [accept 1.2×10^5 (N)]	**(1)**	**4**
	Air resistance to the left [accept 3.0×10^4 (N)][do not accept "viscous drag"]	**(1)**	
	Force from rails to the right [accept 1.5×10^5 (N)]	**(1)**	
	[withhold one mark if more forces than three][if magnitudes used ignore names of forces]	**(1)**	
	Total length of arrows towards the left equals length of arrow to the right [to within 2 mm using measuring tool][dependent on any three horizontal forces, do not check unless lengths look close by eye]		
			
18(b)	A Newton's third law pair of forces		**5**
	• Forces of equal magnitude that act in opposite directions [do not accept "equal and opposite reaction"][accept act for equal times]	**(1)**	
	• Same type of force	**(1)**	
	• (Acting on) different bodies	**(1)**	
		(1)	
	These two forces both act on the engine [accept "on the same body"]	**(1)**	
	One force is gravitational [do not accept "weight"]and the other is a contact force		
	Total for question 18		**9**