2005 SCORING GUIDELINES AP® PHYSICS B

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-	10141	4 points	Velocity (m/s)	4	3	-	2	<u> </u>	<u> </u>	-+0	 	ī	-	1	,	,	4-	_
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10 20	to pomits total	(a)																

The velocities can be found from the slope of the position graph. For showing a positive velocity of magnitude 1.5 m/s (i.e., 12 m/8 s) between

1 point 1 point 0 s and 8 s inclusive For showing zero velocity between 10 s and 18 s inclusive For showing a negative velocity of magnitude 2.4 m/s (i.e., 12 m/5 s) between

1 point For showing two nonvertical transition regions; between t=8 s and 10 s and between t=18 s and 20 s 20 s and 25 s inclusive

1 point

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Question 1 (continued)

Distribution of points

9	J.)	
	(i) 3 points	
	For a definition or equation for average acceleration $a = \lambda n/M$ OR $n = n + nt$	1 point
	For the correct substitution from part (a)	1 point
	$a_{\text{avg}} = (0 - 1.5 \text{ m/s})/2 \text{ s}$	
	For the correct abover including times and sign $a_{\rm avg} = -0.75 \; {\rm m/s^2}$	т рошт

(ii) 1 point



For a correctly drawn vector, with or without a label

1 point

2 points (c)

The acceleration is zero, so the normal force (apparent weight) is equal to the gravitational force. For a correct relationship leading to a calculation of apparent weight N=W=mg-OR-N=ma

1 point

1 point

 $W_{\rm app} = (70 \text{ kg})(9.8 \text{ m/s}^2)$

For the correct answer with units

 $W_{\rm app} = 686 \text{ N} \text{ (or 700 N using } g = 10 \text{ m/s}^2 \text{)}$