

Practice test mark scheme Foundation

Q		Expected answers	Marks	Additional guidance
1	a i	C	1	any order accept rearranged version
	a ii	A	1	
	a iii	D	1	
	b	A and C OR B and D	1	
	c i	(average) speed = distance \div time or $v = d/t$ etc.	1	
	c ii	70 (km/h)	1	
			6	
2	a	8000	1	deduct a mark if more than 2 ticks
	b i	A	1	
	b ii	All the journeys have the same speed. The car with the most people has the most mass.	1	
			1	
			4	
3		horizontal line at 6 m/s, 2 seconds long	1	
		horizontal line at 0, 1.5 seconds long	1	
		horizontal line at -3 m/s, 4 seconds long	1	
		all 3 lines in correct order, i.e. 6, 0, 3 and connected by vertical or near vertical lines	1	
4	a i	16 (m/s)	1	any 2
	a ii	B	1	
	a iii	A	1	
	b i	B	1	
	b ii	<ul style="list-style-type: none"> • longest time • less force • smaller momentum change • less damage/safer landing 	2	
			6	

TOTAL	20
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Practice test mark scheme Higher

Q		Expected answers	Marks	Additional guidance	
1		horizontal line at 6 m/s, 2 seconds long	1		
		horizontal line at 0, 1.5 seconds long	1		
		horizontal line at -3 m/s, 4 seconds long	1		
		all 3 lines in correct order, i.e. 6, 0, 3 and connected by vertical or near vertical lines	1		
			4		
2	a	C	1	accept Ns	
	b	16 500 kg m/s	1		
	c	A = C and B is greater than D	1		
			4		
3	a i	2.5 J	1	or $F \times d$ 125 J by itself gets 2 deduct one mark if more than two boxes ticked	
	a ii	20 J	1		
	b	gpe = weight \times vertical height difference 125 (J)	1		
			1		
	c	kinetic energy of the arrow when it reaches the ground is 175 J $velocity^2 = 175/0.35$	1		
			1		
			6		
4	a i	B	1	any 2 can be implicit can be implicit Completely correct answer gets all 3 marks	
	a ii	<ul style="list-style-type: none"> • longest time • less force • smaller momentum change • less damage/safer landing 	2		
	b	time = 0.75 s (allow between 0.70 and 0.75 s)	1		
		change in momentum = 16×15 or 240 (kg m/s)	1		
		average force = $240 \text{ kg m/s} / 0.75 = 320 \text{ N}$ (ecf from own time)	1		
					6

TOTAL 20