

GCSE Physics

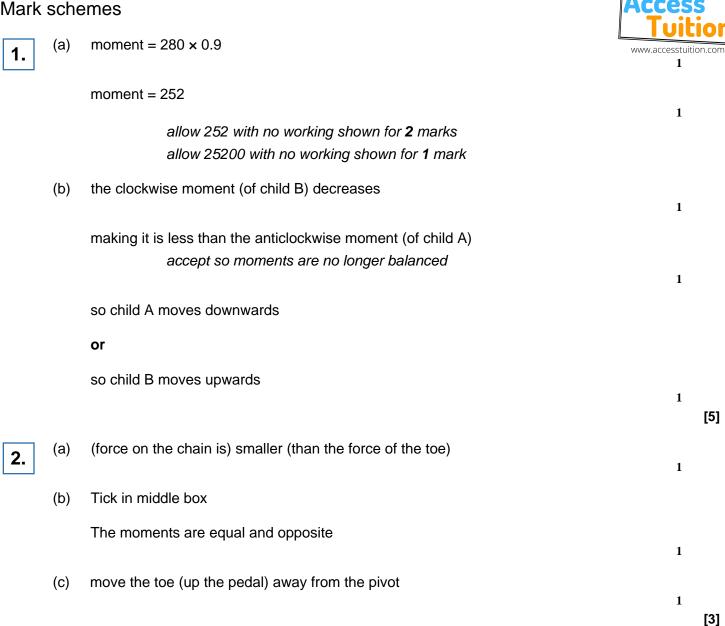
Moments

Mark Scheme

Time available: 56 minutes Marks available: 49 marks

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Mark schemes



3.	(a)	turning	1	Access Tuition
	(b)	420	allow 1 mark for correct substitution, ie 1400 × 0.30 provided no subsequent step shown	www.accesstuition.com
	(c)	Α	reason only scores if A is chosen	
		-	orrect reason: s furthest away (from the pivot) accept distance (from the pivot) is the greatest accept it is further away (from the pivot) accept furthest away from the rock	1
4.	(a)	3000	allow 1 mark for correct substitution, ie 600 × 5 provided no subsequent step	[5]
	(b)	anticlockw	vise moment must be both words	2
	(c)	(i) 3400) allow 3.4 kilo (newtons)	1
		(ii) as th	ne distance (of the girl from point A) increases, force F increases allow gets bigger for increases force is (directly) proportional to distance will negate any correct response	1 1 [5]
5.	(a)	38 400	allow 6.4 × 6000 for 1 mark	2
		Nm	or newton metres do not credit 'nm', 'mN' or 'metre newtons'	1

(b) 16 000 (N) **or** 16 <u>k</u>N

6.

7.

allow **1** mark for 38 400 \div 2.4 accept their (a) \div 2.4 correctly calculated for **2** marks accept their (a) \div 2.4 for **1** mark



2

[5]

(a) 960 (Nm) 1 see-saw is in equilibrium accept see-saw is balanced see-saw is stationary is insufficient 1 (total) clockwise moments = anticlockwise moment accept no resultant moment forces are balanced is insufficient an answer clockwise moments balance the anticlockwise moments gains 2 marks 1 600 (Nm) (b) (i) 1 (ii) 375 (N) or their (b)(i) ÷ 1.6 correctly calculated do not credit if (b)(i) is larger than 960 allow 1 mark for correct substitution and transformation ie $\frac{600}{1.6}$ or $\frac{\text{their (b)(i)}}{1.6}$ 2 (i) turning effect (a) accept turning force accept force x distance (accept symbols only if correctly defined) do not accept newtons x metres 1 (ii) stop apparatus falling over accept holds the stand in place accept make it safer / stable references to balanced / equilibrium are insufficient 1

[6]

(b)

300

(a)

newton

8.

9.

(iii)	as <i>x</i> increases <i>y</i> increases 1		Acces Tuit	s ion	
	in same proportion / ratios		www.accesstuiti	on.com	
	allow both marks for they are <u>directly</u> proportional				
	or				
	a specific example eg doubling y , doubles x				
	allow both marks for a correct answer giving figures				
	eg they increase in the ratio of 1 to 7				
	allow for 1 mark positive correlation				
			1		
(iv)	the centre of mass of the ruler is at the axis of rotation				
			1		
108					
	allow 1 mark for correct substitution ie 240 × 0.45				
			2		
newton metres / Nm					
symbols must be correct					
	for full credit the unit must be consistent with the numer	rical answer			
			1		
				[8]	
	allow 1 mark for rearranging equation or correct substit	ution			
				[2]	
Α					
~			1		

	(perpendic	(perpendicular) distance between the camera and pivot is greatest				
(b)	increases					
(c)	5.0 × 9.8	an answer of 49 scores 2 marks				
	49					

allow N 1 moment (of a force) = force × distance (d)

1

1

1

1

1

(e) 144 cm = 1.44 m

an answer of 70.56 scores **3** marks an answer of 71 scores **3** marks



[10]

 $moment = 49 \times 1.44$ $allow \ ecf \ from \ part \ (c)$ 1 moment = 70.56 $answers \ of \ 7056 \ or \ 7100 \ score \ 2 \ marks$ 1