

Sheet A – Moments and couples grid

Statement	S/A/N	Reason
1. The moment of a force is equal to the force multiplied by the distance from the pivot.		
2. The moment of a force is equal to the weight.		
3. The moment of a force is equal to the force multiplied by the perpendicular distance between the line of action of the force and the pivot.		
4. A couple is made up of two equal sized forces.		
5. A couple is made up of two parallel forces.		
6. A couple is made up of two equal sized parallel forces acting in opposite directions but not along the same line.		
7. The anticlockwise moments will equal the clockwise moments.		
8. If the anticlockwise moments are greater than the clockwise moments the body will spin.		
9. For a beam with no weights acting on it, the pivot should be in the centre of the beam for it to balance.		
10. There will be a moment due to the weight of the beam if the beam's centre of mass rests on the pivot.		

Sheet B – Solutions to moments and couples grid

Statement	S/A/N	Reason
1. The moment of a force is equal to the force multiplied by the distance from the pivot.	S	Will be true if the distance is the perpendicular distance between the line of action of the force and the pivot.
2. The moment of a force is equal to the weight.	N	A moment can never equal a force. A moment must be a force multiplied by the correct distance.
3. The moment of a force is equal to the force multiplied by the perpendicular distance between the line of action of the force and the pivot.	A	This is the formal definition of a moment.
4. A couple is made up of two equal sized forces.	S	Will be true if the forces are parallel and acting in opposite directions.
5. A couple is made up of two parallel forces.	S	Will be true if the forces are equal and acting in opposite directions.
6. A couple is made up of two equal sized parallel forces acting in opposite directions but not along the same line.	A	This is a definition of a couple. (Note: the moment (or torque) of a couple is given by multiplying one of the forces by the perpendicular distance between them.)
7. The anticlockwise moments will equal the clockwise moments.	S	This is only true if the system is in equilibrium.
8. If the anticlockwise moments are greater than the clockwise moments the body will spin.	A	There is a resultant moment on the body that will cause the body to rotate.
9. For a beam with no weights acting on it, the pivot should be in the centre of the beam for it to balance.	S	This assumes that the centre of mass is at the centre of the beam which is only true if the body is of uniform dimensions and uniform density.
10. There will be a moment due to the weight of the beam if the beam's centre of mass rests on the pivot.	N	As the line of action of the weight acts through the pivot, the moment due to the beam's weight will be zero because the distance to the pivot is zero.

Moments: sometimes, always, never true – cards

The moment of a force is equal to the force \times the distance from the pivot	The moment of a force is equal to the weight
The moment of a force is equal to the force \times the perpendicular distance between the line of action of the force and the pivot	A couple is made up of two equal sized forces
A couple is made up of two parallel forces	A couple is made up of two equal sized parallel forces acting in opposite directions but not along the same line
The anticlockwise moments will equal the clockwise moments	If the anticlockwise moments are greater than the clockwise moments the body will spin
For a beam with no weights acting on it, the pivot should be in the centre of the beam for it to balance	There will be a moment due to the weight of the beam if the beam's centre of mass rests on the pivot
This statement is ALWAYS true under all conditions	This statement is SOMETIMES true depending on the conditions
This statement is NEVER true regardless of the conditions	