# Multiple choice questions - Moments

Year: Year 13 · 10

**Question 1** The moment of a force is

- ◯ **A.** force x perpendicular distance
- ◯ **B.** force / distance
- ◯ **C.** force + distance
- ◯ **D.** force x area

**Question 2** The unit of moment is

- ◯ **A.** N
- ◯ **B.** N m
- ◯ **C.** J s
- ◯ **D.** N/m

**Question 3** The weight of a uniform rod acts at

- ◯ **A.** one end
- ◯ **B.** the pivot
- ◯ **C.** its midpoint
- ◯ **D.** its heaviest point

**Question 4** For equilibrium, total clockwise moment

- ◯ **A.** is zero only
- ◯ **B.** exceeds anticlockwise
- ◯ **C.** is double
- ◯ **D.** equals total anticlockwise moment

**Question 5** A 10 N force at perpendicular distance 0.3 m has moment

- ◯ **A.** 3 N m
- ◯ **B.** 30 N m
- ◯ **C.** 0.03 N m
- ◯ **D.** 3 N

**Question 6** When a plank is about to tilt about a support, the reaction at the other support is

- ◯ **A.** equal to the weight
- ◯ **B.** zero
- ◯ **C.** the largest
- ◯ **D.** undefined

**Question 7** To simplify a moment equation, take moments about

- ◯ **A.** the heaviest object
- ◯ **B.** the centre of the rod always
- ◯ **C.** a point where an unknown force acts
- ◯ **D.** a random point

**Question 8** A light rod

- ◯ **A.** is uniform
- ◯ **B.** is non-rigid
- ◯ **C.** has no length
- ◯ **D.** has negligible mass

**Question 9** A 40 kg child 1.5 m from a pivot balances a child of 30 kg at

- ◯ **A.** 2 m on the other side
- ◯ **B.** 1 m
- ◯ **C.** 1.5 m
- ◯ **D.** 3 m

**Question 10** The perpendicular component of a force F at angle $\theta$ to a rod is

- ◯ **A.** $F\cos\theta$
- ◯ **B.** $F\sin\theta$
- ◯ **C.** $F\tan\theta$
- ◯ **D.** $F$

# Answer grid - Moments

Year: Year 13

| Question | Answer | Explanation |
|---|---|---|
| 1 | **A** | Definition. |
| 2 | **B** | Newton metre. |
| 3 | **C** | Centre of mass. |
| 4 | **D** | Balance. |
| 5 | **A** | 10 x 0.3. |
| 6 | **B** | Limiting case. |
| 7 | **C** | Eliminates the unknown. |
| 8 | **D** | Model. |
| 9 | **A** | 40 x 1.5 = 30 x 2. |
| 10 | **B** | Angle to the rod. |