2.4 Movement Analysis: Joint Actions and Joint Types: 10-minute Pack

AQA 8582 · Calculators not allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 From a hang on the rings, a gymnast lifts both straight legs together forward until they are horizontal in front of the body. Identify the joint action at the hip and the plane of movement.

(Total for Question 1 is 2 marks)

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2 Discuss how the different joint types found at Kwame's hip, shoulder and elbow allow him to combine these joint actions into a single diving save, and evaluate whether a goalkeeper's save would still be possible if the shoulder and hip were hinge joints instead of ball and socket joints.

(Total for Question 2 is 9 marks)

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Mark scheme · 2.4 Movement Analysis: Joint Actions and Joint Types: 10-minute Pack

Question 1

hip flexion	**B1**
sagittal plane	**B1**

Answer: Hip flexion, in the sagittal plane.

Question 2

Level 3 A detailed and coherent response that accurately names the joint type and relevant joint actions at Kwame's hip, shoulder and elbow, explains how they combine to produce the diving save, and gives a well-justified evaluation of what would be lost if the shoulder and hip were hinge joints instead of ball and socket joints. Sustained, accurate use of joint-action and joint-type terminology throughout.	**7-9**
Level 2 Some accurate naming of joint types and joint actions at Kwame's hip, shoulder and/or elbow, with some explanation of how they combine, but coverage of all three joints or the evaluative point may be incomplete or underdeveloped.	**4-6**
Level 1 Basic or generic statements about joints and movement with little or no application to Kwame's specific save, and little or no evaluation.	**1-3**
Level 0 No relevant content.	**0**

Indicative content:

- The hip is a ball and socket joint, allowing the abduction (sideways) and rotation described, which drives Kwame's whole body sideways towards the ball.
- The shoulder is also a ball and socket joint, allowing both flexion (reaching the arm forward/up) and abduction (reaching the arm sideways) at the same joint, which lets Kwame reach towards a ball that could be in many different directions.
- The elbow is a hinge joint, allowing only extension (straightening the arm), which adds extra reach in a single, simple plane once the shoulder has already aimed the arm in the right direction.
- The combination shows a general principle: ball and socket joints (hip, shoulder) provide the multi-directional positioning needed for an unpredictable sporting situation, while hinge joints (elbow) provide simple, single-plane extension to extend that reach further.
- Evaluative point: if the shoulder and hip were hinge joints, Kwame could only flex/extend at each, meaning he could reach forward or straighten his body in one plane, but could not abduct/rotate sideways or diagonally to reach a ball that was not directly in front of him.
- Evaluative point: because most diving saves need to cover a wide range of directions (not just straight ahead), a hinge-joint hip and shoulder would make many real saves impossible or far less effective, showing how essential the ball and socket joint type is to this specific sporting skill.
- Balanced conclusion: the save relies on ball and socket joints for direction and reach and a hinge joint for simple extension, and each joint type is suited to the specific role it plays in the movement, rather than one joint type being generally superior to the other.

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