

**Target Distance: 90cm**

Errors of  $>4.5^\circ$  (for this target, beyond the yellow circle) are likely to be significant.

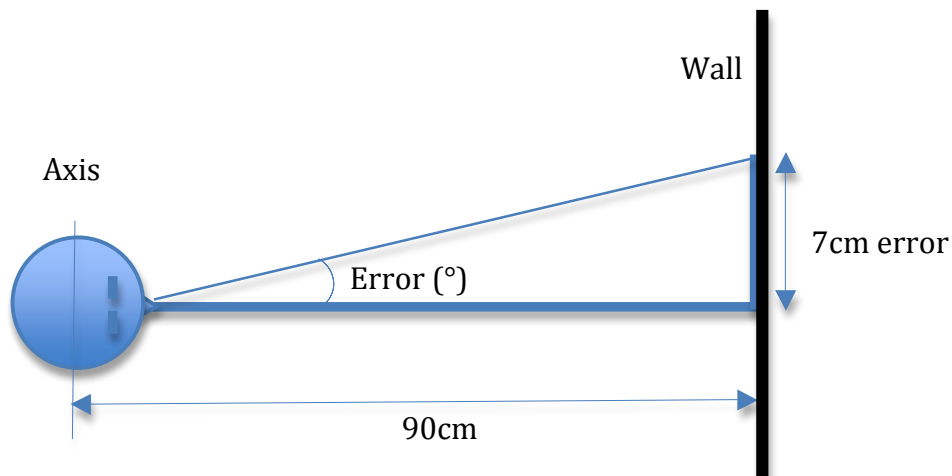
Treleaven J, Jull G, Sterling M. [Dizziness and unsteadiness following whiplash injury: characteristic features and relationship with cervical joint position error.](#) J Rehabil Med. 2003 Jan;35(1):36-43.

Distance from center of the target to a 4.5-degree error depends the distance the patient is from the target. This target is calibrated for a patient who is 90 cm away.

If the patient (center of axis of rotation to the target, thus, the crown of the head) is 90 cm from the target, then a 7 cm error from the center of the target translates to a 4.5 degree error:

$$\text{Arctan of } 7\text{cm}/90\text{cm} = 4.5 \text{ degrees}$$

On a calculator, arctan is often shown as  $\tan^{-1}$ .



So, the error in degrees is the arctan (or  $\tan^{-1}$ ) of  $7/90$ , or  $4.5^\circ$ .