



## Determining Passing Scores for Professional Certification Examinations, Part 1

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The Certification Board of Nuclear Cardiology (CBNC) is frequently asked whether the nuclear cardiology exam is "graded on a curve", meaning a system where group performance is used to determine whether an individual passes. The answer to that question is no.

Given the legislative environment within which testing programs operate, as well as standards of fairness and good professional practice, the establishment of passing scores must satisfy certain professional and governmental guidelines. That is, there should be a well-developed rationale for the passing score that is established. Grading on the curve risks bypassing such rationale.

For examinations designed to assess knowledge associated with professional competence, such as CBNC's, test measurement experts have determined (and courts have upheld) that the passing score should be set through a *criterion-referenced* approach - one that relates the performance of candidates on the test to an established standard. This approach differs significantly from the *normative* approach, the colloquially termed "grading on the curve" system, used for many academic examinations. With the normative approach, each candidate's performance is measured against the performance of the entire group taking the examination. Individuals with the highest scores relative to the rest of the group will pass.

But what if the group as a whole performs poorly? With the normative approach, the highest scorers will still pass the examination, even though their "high" scores may be well below those that would be expected from competent professionals. This means that individuals will become certified even though they do not possess the requisite knowledge and skills. Clearly, no sponsoring organization wants to be in the position of certifying individuals who are simply "the best of a bad lot". Nor does the field want such individuals certified, as this would eradicate any value held in the certification. Conversely, with a normative approach, if the entire group performs well and scores are generally high, there will still be some who fail despite having performed well on the exam, but with scores falling below "the curve".

The criterion-referenced approach, used by CBNC to set passing scores, avoids the problems associated with the normative method. It ensures that candidates will pass the examination if they have met a predetermined standard of knowledge. This predetermined standard is defined as the minimum score that would be expected from professionals who have the level of knowledge and skills needed to competently carry out their professional responsibilities. This is the foundation on which the CBNC examination in nuclear cardiology is based.

See Also: **Determining the Passing Score, Part 2** - A detailed review of how passing scores for each individual exam are established.