

Chapter 10 Selected Homework Answers

1. Answers will vary depending on the amount of weight given to the various content objectives and educational objectives set for the unit. See table 10-1 (page 183) for the general outline of a table of specifications.

3. See Discrimination equation on page 214.

$$\text{Discrimination} = (35 - 10)/(50) \times 100\% = 25/50 = .50 = 50\%.$$

Note that this item has good discrimination and increases test reliability.

5. See Discrimination equation on page 214.

$$\text{Discrimination} = (50 - 65)/(100) \times 100\% = -15/100 = -.15 = -15\%.$$

Note that this item discriminates negatively and thus reduces total test reliability.

7. See Difficulty equation on page 213.

$$\text{Difficulty} = (65 + 35)/(100 + 100) \times 100\% = 100/200 = .50 = 50\%$$

9. See Difficulty equation on page 213.

$$\text{Difficulty} = (25 + 35)/(100 + 100) \times 100\% = 60/200 = .30 = 30\%.$$

This item is more difficult than you desire.

11. See Difficulty equation on page 213.

$$\text{Difficulty} = (250 + 300)/(500 + 500) \times 100\% = 550/1000 = .55 = 55\%$$

13. When the difficulty index is .50 (50%). As the test item becomes easier or more difficult, the potential discrimination goes down. See figure 10.4.

15. Answers will vary depending on the quality of the item. See page 194 for matching-item writing guidelines.

17. Extrinsically ambiguous items appear to be ambiguous to the student who does not understand the concept or content. However, such items are not ambiguous to the students who understand the content or concept.

Intrinsically ambiguous items are ambiguous to students who understand the content or concept.

You want your test items to reflect extrinsic ambiguity but *not* intrinsic ambiguity.

19. Reliability and validity

21. Use the KR_{21} equation.

$$KR_{21} = (100/99) \times (1 - [50 \times [(1 - (50/100))]/50])$$

$$KR_{21} = (100/99) \times (1 - [50 \times [(1 - .50)]]/50)$$

$$KR_{21} = (100/99) \times (1 - [50 \times [.50]]/50)$$

$$KR_{21} = (100/99) \times (1 - [25]/50)$$

$$KR_{21} = (100/99) \times (1 - .50)$$

$$KR_{21} = (100/99) \times (.50)$$

$$KR_{21} = 1.01 \times (.50)$$

$$KR_{21} = .51$$

23. Use the KR_{21} equation 10.2.

$$KR_{21} = (50/49) \times (1 - [40 \times [(1 - (40/50))]/100])$$

$$KR_{21} = (50/49) \times (1 - [40 \times [(1 - .80)]]/100)$$

$$KR_{21} = (50/49) \times (1 - [40 \times [.20]]/100)$$

$$KR_{21} = (50/49) \times (1 - [8]/100)$$

$$KR_{21} = (50/49) \times (1 - .08)$$

$$KR_{21} = (50/49) \times (.92)$$

$$KR_{21} = 1.02 \times (.92)$$

$$KR_{21} = .94$$

25. You probably want to generalize your questionnaire results to other individuals. So the people who respond to your questionnaire must "look like" (i.e., be representative of) the population to which you desire to generalize. It is possible to have a very large sample that is not representative of the population to which you wish to generalize.

27. The cover letter.