Question 1-1. This question speaks to the only reliable breast MRI finding to predict pectoral muscle invasion by breast cancer, which is contrast enhancement of the pectoral muscle (D). So (D) is the correct answer.

Question 1-2. This question highlights several controversies concerning the use of preoperative breast MRI in a newly diagnosed patient with breast cancer. These controversies, whether rational or irrational, include conflicting results of reexcision rates (A), associated increased mastectomy rates (B), consequent delay in definitive therapy (C), and no proof of long-term survival benefit (D). Since (A), (B), (C), and (D) are true, (E), all of the above, is the correct answer.

Question 1-3. This question emphasizes that in staging of breast cancer regional lymph nodes in the field of view on breast MRI include intramammary nodes (A), ipsilateral axillary level I nodes (C), ipsilateral axillary level II nodes (D), and ipsilateral axillary level III nodes (E), but not supraclavicular nodes (B). So (A), (C), (D), and (E) are true, but (B) is false and the exception; and (B) is the correct answer.

Question 1-4. This question is illustrated by an axial, postcontrast, T1-weighted breast MR image (Figure 8) of a 63-year-old woman with a markedly deformed left breast. A contracted left breast with a large irregular, enhanced mass located posteriorly and medially and with overlying ulceration suggests a breast cancer. Enhancement, in addition to apparent infiltration of the left pectoralis major muscle by the mass, is consistent with invasion of the pectoralis major muscle by a left breast cancer (A). The pericardium and pleura are not enhanced, so invasion of the pericardium (C) and pleura (D) by a left breast cancer are unlikely diagnoses. Skin thickening and skin enhancement involve the medial aspect of the breast and extend across the midline to involve the medial aspect of the right breast. There is evidence of skin involvement by a left breast cancer; thus (E) is false. Although not seen on this axial view, chest wall invasion (B) is better seen on a sagittal view of the breast than on the axial view. So (A) is the most likely diagnosis, and (A) is the correct answer.

Question 1-5. This question alludes to the subset of patients least likely to benefit from preoperative breast MRI, which is a patient planning mastectomy to treat recurrent breast cancer (D). A patient with dense breast tissue (A), a patient with a posteriorly located breast cancer (B), a patient planning to undergo partial breast irradiation (C), and a patient undergoing neoadjuvant chemotherapy (E) will especially benefit from preoperative breast MRI. So (D) is the correct answer.
Question 1-6. This question addresses a clinical scenario for which preoperative breast MRI is most useful for treatment planning of breast cancer. Of the clinical scenarios given as options, preoperative breast MRI is most useful when positive surgical margins are present and before reoperation (D). So (D) is the correct answer.

Question 1-7. This question speaks to a type of breast cancer that shows a reduction in post-lumpectomy reexcision rates when breast MRI had been performed preoperatively. Of the options provided [i.e., invasive lobular carcinoma (A), invasive ductal carcinoma (B), mucinous carcinoma (C), and metaplastic carcinoma (D)], it is important for radiologists to know that several studies consistently show that patients with invasive lobular carcinoma (A) have a reduced reexcision rate when preoperative breast MRI is performed before lumpectomy. So (A) is the correct answer.

Question 1-8. This question calls attention to patients who are at high risk for multifocal and bilateral breast cancer. Multifocal and bilateral breast cancer occurs more often in a patient when a history of prior mantle radiation therapy is present (A); and in patients with the BRCA1 (B) and BRCA2 (C) mutation, and in a patient with invasive lobular carcinoma (E); but not in a patient with inflammatory breast cancer (E). So (A) (B), (C), and (E) are true, but (D) is false and the exception; and (D) is the correct answer.

Question 1-9. This question refers to the most sensitive and accurate imaging modality for local-regional staging of breast cancer, which is contrast-enhanced breast MRI (C). So (C) is the correct answer.

Question 1-10. This question draws attention to the imaging modality in which the actual size of a breast cancer correlates best with its pathological size assessment, which is again contrast-enhanced breast MRI (C). So (C) is the correct answer.

**Answer Key for Volume 38 # 1:**

1. D  
2. E  
3. B  
4. A  
5. D  
6. D  
7. A  
8. D  
9. C  
10. C