AUC PreCalculus   Assignment 7.

For Exercises 15–22, determine the restrictions on the variable.

15. $\dfrac{x - 4}{x + 7}$

16. $\dfrac{y - 1}{y + 10}$

17. $\dfrac{a}{a^2 - 81}$

18. $\dfrac{t}{t^2 - 16}$

19. $\dfrac{a}{a^2 + 81}$

20. $\dfrac{t}{t^2 + 16}$

21. $\dfrac{6c}{7a^3b^2}$

22. $\dfrac{11z}{8x^5y}$

For Exercises 35–42, multiply or divide as indicated.
The restrictions on the variables are implied.

35. $\dfrac{3a^5b^7}{a - 5b} \cdot \dfrac{2a - 10b}{12a^4b^{10}}$

42. $\dfrac{3y^2 + 21y + 147}{25y - y^3} \div \dfrac{y^3 - 343}{y^2 - 12y + 35}$

37. $\dfrac{c^2 - d^2}{cd^{11}} \div \dfrac{8c^2 + 4cd - 4d^2}{8c^4d^{10}}$

40. $\dfrac{2c^2 - 2cd}{3c^2d + 2c^3} \cdot \dfrac{4c^2 + 12cd + 9d^2}{2c^2 + cd - 3d^2}$

39. $\dfrac{2a^2b - ab^2}{8b^2 + ab} \cdot \dfrac{a^2 + 16ab + 64b^2}{2a^2 + 15ab - 8b^2}$

36. $\dfrac{8x - 3y}{x^3y^4} \cdot \dfrac{6xy^8}{24x - 9y}$

41. $\dfrac{x^3 - 64}{16x - x^3} \div \dfrac{2x^2 + 8x + 32}{x^2 + 2x - 8}$

38. $\dfrac{m^{11}n^2}{m^2 - n^2} \div \dfrac{18m^9n^5}{9m^2 + 6mn - 15n^2}$