

The deadline for all homework assignments is the one specified in Archie before 11:59 pm. As discussed in class, It must be correctly uploaded in order to be graded. Show all your work and justifications.

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

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

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

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

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

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

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

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

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

For Exercises 35–42, multiply or divide as indicated.

The restrictions on the variables are implied.

$$35. \frac{3a^5b^7}{a-5b} \cdot \frac{2a-10b}{12a^4b^{10}} \quad 42. \frac{3y^2+21y+147}{25y-y^3} \div \frac{y^3-343}{y^2-12y+35}$$

$$37. \frac{c^2-d^2}{cd^{11}} \div \frac{8c^2+4cd-4d^2}{8c^4d^{10}} \quad 40. \frac{2c^2-2cd}{3c^2d+2c^3} \cdot \frac{4c^2+12cd+9d^2}{2c^2+cd-3d^2}$$

$$39. \frac{2a^2b-ab^2}{8b^2+ab} \cdot \frac{a^2+16ab+64b^2}{2a^2+15ab-8b^2} \quad 36. \frac{8x-3y}{x^3y^4} \cdot \frac{6xy^8}{24x-9y}$$

$$41. \frac{x^3-64}{16x-x^3} \div \frac{2x^2+8x+32}{x^2+2x-8} \quad 38. \frac{m^{11}n^2}{m^2-n^2} \div \frac{18m^9n^5}{9m^2+6mn-15n^2}$$