

Extra Practice Sec 11-3

Laboratory Exercises

Simplify each rational expression. State the excluded values of the variables.

$$1. \frac{(y+4)}{(y-4)(y+4)}$$

$$2. \frac{(a-7)}{(a+1)(a-7)}$$

$$3. \frac{r(r+3)}{(r+3)}$$

$$4. \frac{m(m-1)}{m-1}$$

$$5. \frac{2x^3}{2x^2(x^2-4)}$$

$$6. \frac{-3z^2}{z(z^2-3)}$$

$$7. \frac{(a-4)(a+4)}{(a-2)(a-4)}$$

$$8. \frac{(c+6)(c-2)}{(c-2)(c-2)}$$

$$9. \frac{(t+2)(t-2)(t+3)(t-3)}{(t+2)(t-3)}$$

$$10. \frac{(x+5)(x-6)}{(x+5)(x-5)(x^2-6)}$$

$$1. \frac{-1(3w-2)}{(3w-2)(w+4)}$$

$$12. \frac{a(b+2)(b-7)}{(b+1)(b+2)(b+3)}$$

Written Exercises

Simplify each rational expression. State the excluded values of the variables.

$$13. \frac{y-3}{y^2-9}$$

$$14. \frac{s+6}{s^2-36}$$

$$15. \frac{a^2-25}{a^2+3a-10}$$

$$16. \frac{x^2-49}{x^2-2x-35}$$

$$17. \frac{r^3-r^2}{r-1}$$

$$18. \frac{z^2-3z}{z-3}$$

$$19. \frac{4n^2-8}{4n-4}$$

$$20. \frac{6y^3-12y^2}{12y^2-18}$$

$$2. \frac{3m^3}{6m^2-3m}$$

$$22. \frac{7a^3b^2}{21a^2b+49ab^3}$$

$$23. \frac{x+3}{x^2+6x+9}$$

$$24. \frac{c-6}{c^2-12c+36}$$

$$25. \frac{g^2+g-2}{g^2-3g+2}$$

$$26. \frac{r^2-r-20}{r^2+9r+20}$$

$$27. \frac{m^2-36}{m^2+5m-6}$$

$$28. \frac{a^2-9}{a^2+6a-27}$$

$$29. \frac{2y-4}{y^2+3y-10}$$

$$30. \frac{4x+8}{x^2+6x+8}$$

$$31. \frac{k^2-1}{k^2+2k+1}$$

$$32. \frac{b^2-9}{b^2+6b+9}$$

$$33. \frac{9-a^2}{a^2-a-6}$$

$$34. \frac{25-x^2}{x^2+x-30}$$

$$35. \frac{-x^2+6x-9}{x^2-6x+9}$$

$$36. \frac{a^2-2a+1}{-a^2+2a-1}$$

$$37. \frac{4y^2+7y-2}{8y^2+15y-2}$$

$$38. \frac{4x^2-6x-4}{2x^2-8x+8}$$

$$39. \frac{3m^2+9m+6}{4m^2+12m+8}$$

$$40. \frac{6r^2+12r-48}{5r^2-5r-10}$$

$$41. \frac{2t^2-t-21}{28-15t+2t^2}$$

$$42. \frac{3z^2+5z-2}{4-13z+3z^2}$$

$$43. \frac{b^2+2b-8}{b^4-20b^2+64}$$

$$44. \frac{a^2+2a-3}{a^4-10a^2+9}$$

$$45. \frac{2x^2+7x-4}{4x^2-4x+1}$$

$$46. \frac{6y^2+7y+2}{6y^2+5y+1}$$

$$47. \frac{x^4-1}{x^4-5x^2+4}$$

$$8. \frac{x^4-16}{x^4-8x^2+16}$$

$$49. \frac{6s^2+17s-14}{3s^2-20s+12}$$

$$50. \frac{8t^2-14t-15}{12t^2-19t-21}$$

$$51. \frac{c^2-c-20}{c^3+10c^2+24c}$$

$$52. \frac{n^2-8n+12}{n^3-12n^2+36n}$$

$$53. \frac{a^4-5a^2+4}{a^2-a-2}$$

$$54. \frac{y^4-13y^2+36}{y^2+5y+6}$$

$$55. \frac{12x^3+12x^2-9x}{12x^3+18x^2-12x}$$

$$56. \frac{16a^3-24a^2-160a}{8a^4-36a^3+16a^2}$$