

① Show your work ② Number your work ③ Put ur Name on each page

MULTIPLYING & DIVIDING RATIONAL EXPRESSIONS PRACTICE

Multiply and simplify.

1. $\frac{5y^2}{3} \cdot \frac{9x}{10y}$

2. $\frac{2x^3y}{3z^4} \cdot \frac{6xz^5}{10y^5}$

3. $\frac{9y^2}{8} \cdot \frac{32x}{27y}$

4. $\frac{2x^2y}{3z^3} \cdot \frac{12xz^4}{6y^3}$

5. $\frac{3y^2}{5} \cdot \frac{10x}{15y}$

6. $\frac{4x^2y}{2z^2} \cdot \frac{6xz^3}{20y^4}$

7. $\frac{x+4}{3x+4y} \cdot \frac{9x^2-16y^2}{2x^2+3x-20}$

8. $\frac{a^2-10a+21}{a-7} \cdot \frac{a^2+a-12}{(a-3)^2}$

9. $\frac{x+1}{3x+y} \cdot \frac{9x^2-y^2}{2x^2+3x+1}$

10. $\frac{a^2-6a+9}{a-3} \cdot \frac{a^2+3a-18}{(a-3)^2}$

11. $\frac{5x^2}{3t^2} \cdot \frac{9t^8}{25x}$

12. $\frac{7a^3}{10b^7} \cdot \frac{5b^3}{3a}$

13. $\frac{3x-6}{5x} \cdot \frac{x^3}{5x-10}$

14. $\frac{5t^3}{4t-8} \cdot \frac{6t-12}{10t}$

15. $\frac{y^2-16}{2y+6} \cdot \frac{y+3}{y-4}$

16. $\frac{m^2-n^2}{4m+4n} \cdot \frac{m+n}{m-n}$

17. $\frac{x^2-16}{x^2} \cdot \frac{x^2-4x}{x^2-x-12}$

18. $\frac{y^2+10y+25}{y^2-9} \cdot \frac{y^2+3y}{y+5}$

19. $\frac{6-2t}{t^2+4t+4} \cdot \frac{t^3+2t^2}{t^8-9t^6}$

20. $\frac{x^2-6x+9}{12-4x} \cdot \frac{x^6-9x^4}{x^3-3x^2}$

21. $\frac{x^2-2x-35}{2x^3-3x^2} \cdot \frac{4x^3-9x}{7x-49}$

22. $\frac{y^2-10y+9}{y^2-1} \cdot \frac{y+4}{y^2-5y-36}$

23. $\frac{c^3+8}{c^5-4c^3} \cdot \frac{c^6-4c^5+4c^4}{c^2-2c+4}$

24. $\frac{x^3-27}{x^4-9x^2} \cdot \frac{x^5-6x^4+9x^3}{x^2+3x+9}$

25. $\frac{a^3-b^3}{3a^2+9ab+6b^2} \cdot \frac{a^2+2ab+b^2}{a^2-b^2}$

26. $\frac{x^3+y^3}{x^2+2xy-3y^2} \cdot \frac{x^2-y^2}{3x^2+6xy+3y^2}$

27. $\frac{4x^2-9y^2}{8x^3-27y^3} \cdot \frac{4x^2+6xy+9y^2}{4x^2+12xy+9y^2}$

28. $\frac{3x^2-3y^2}{27x^3-8y^3} \cdot \frac{6x^2+5xy-6y^2}{6x^2+12xy+6y^2}$

Divide and simplify.

29. $28p^2q^4 \div \frac{4pq^4}{5r}$

30. $\frac{r^3s}{t} \div \frac{rs^3}{t^3}$

31. $24e^2d^4 \div \frac{3cd^4}{5f}$

32. $\frac{u^5x}{y} \div \frac{ux^2}{y^4}$

33. $\frac{m^5n}{p} \div \frac{mn^3}{p^4}$

34. $\frac{3x^2+4x+1}{3x^2-5x-2} \div \frac{x^2-2x-3}{-5x^2+25x-30}$

35. $\frac{2x^2+5x+3}{2x^2+7x+6} \div \frac{x^2+6x+5}{-5x^2-35x-50}$

36. $\frac{30}{y^2+4y-12} \div \frac{6y}{y-2}$

37. $\frac{15}{y^2+2y-8} \div \frac{5y}{y-2}$

38. $\frac{x^2+3x-28}{x^2+4x+4} \div \frac{x^2-49}{x^2-5x-14}$

39. $\frac{16a^7}{3b^5} \div \frac{8a^3}{6b}$

40. $\frac{9x^5}{8y^2} \div \frac{3x}{16y^9}$

41. $\frac{3y+15}{y^7} \div \frac{y+5}{y^2}$

42. $\frac{6x+12}{x^8} \div \frac{x+2}{x^3}$

$$43. \frac{y^2-9}{y^2} \div \frac{y^5+3y^4}{y+2}$$

$$44. \frac{x^2-4}{x^3} \div \frac{x^5-2x^4}{x+4}$$

$$45. \frac{4a^2-1}{a^2-4} \div \frac{2a-1}{a-2}$$

$$46. \frac{25x^2-4}{x^2-9} \div \frac{5x-2}{x+3}$$

$$47. \frac{x^2-y^2}{4x+4y} \div \frac{3y-3x}{12x^2}$$

$$48. \frac{5y-5x}{15y^3} \div \frac{x^2-y^2}{3x+3y}$$

$$49. \frac{x^2-16}{x^2-10x+25} \div \frac{3x-12}{x^2-3x-10}$$

$$50. \frac{y^2-36}{y^2-8y+16} \div \frac{3y-18}{y^2-y-12}$$

$$51. \frac{y^3+3y}{y^2-9} \div \frac{y^2+5y-14}{y^2+4y-21}$$

$$52. \frac{a^3+4a}{a^2-16} \div \frac{a^2+8a+15}{a^2+a-20}$$

$$53. \frac{x^3-64}{x^3+64} \div \frac{x^2-16}{x^2-4x+16}$$

$$54. \frac{8y^3-27}{64y^3-1} \div \frac{4y^2-9}{16y^2+4y+1}$$

$$55. \frac{8a^3+b^3}{2a^2+3ab+b^2} \div \frac{8a^2-4ab+2b^2}{4a^2+4ab+b^2}$$

$$56. \frac{x^3+8y^3}{2x^2+5xy+2y^2} \div \frac{x^3-2x^2y+4xy^2}{8x^2-2y^2}$$

PRACTICE ANSWERS

$$1. \frac{3xy}{2}$$

$$2. \frac{2x^4z}{5y^4}$$

$$3. \frac{4xy}{3}$$

$$4. \frac{4x^3z}{3y^2}$$

$$5. \frac{2xy}{5}$$

$$6. \frac{3x^3z}{5y^3}$$

$$7. \frac{3x-4y}{2x-5}$$

$$8. a + 4$$

$$9. \frac{3x-y}{2x+1}$$

$$10. a + 6$$

$$11. \frac{3xt^6}{5}$$

$$12. \frac{7a^2}{6b^4}$$

$$13. \frac{3x^2}{25}$$

$$14. \frac{3t^2}{4}$$

$$15. \frac{y+4}{2}$$

$$16. \frac{m+n}{4}$$

$$17. \frac{(x+4)(x-4)}{x(x+3)}$$

$$18. \frac{y(y+5)}{y-3}$$

$$19. \frac{-2}{t^4(t+2)(t+3)}$$

$$20. \frac{x^2(x+3)(x-3)}{4}$$

$$21. \frac{(x+5)(2x+3)}{7x}$$

$$22. \frac{1}{y+1}$$

$$23. c(c-2)$$

$$24. \frac{x(x-3)^2}{x+3}$$

$$25. \frac{a^2+ab+b^2}{3(a+2b)}$$

$$26. \frac{x^2-xy+y^2}{3(x+3y)}$$

$$27. \frac{1}{2x+3y}$$

$$28. \frac{(x-y)(2x+3y)}{2(x+y)(9x^2+6xy+4y^2)}$$

$$29. 35pr$$

$$30. \frac{r^2t^2}{s^2}$$

$$31. \frac{40e^2f}{c}$$

$$32. \frac{u^4y^3}{x}$$

$$33. \frac{m^4p^3}{n^2}$$

$$34. -5$$

$$35. -5$$

$$36. \frac{5}{y(y+6)}$$

$$37. \frac{3}{y(y+4)}$$

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

$$39. \frac{4a^4}{b^4}$$

$$40. 6x^4y^7$$

$$41. \frac{3}{y^5}$$

$$42. \frac{6}{x^5}$$

$$43. \frac{(y-3)(y+2)}{y^6}$$

$$44. \frac{(x+2)(x+4)}{x^7}$$

$$45. \frac{2a+1}{a+2}$$

$$46. \frac{5x+2}{x-3}$$

$$47. -x^2$$

$$48. -\frac{1}{y^3}$$

$$49. \frac{(x+4)(x+2)}{3(x-5)}$$

$$50. \frac{(y+6)(y+3)}{3(y-4)}$$

$$51. \frac{y(y^2+3)}{(y+3)(y-2)}$$

$$52. \frac{a(a^2+4)}{(a+4)(a+3)}$$

$$53. \frac{x^2+4x+16}{(x+4)^2}$$

$$54. \frac{4y^2+6y+9}{(4y-1)(2y+3)}$$

$$55. \frac{(2a+b)^2}{2(a+b)}$$

$$56. \frac{2(2x-y)}{x}$$