

- a) No variables in the denominator
 b) No negative exponents

$$19. 6x^5 \cdot 3x^{-2} = 18x^3$$

$$20. 7x^{-3} \cdot 8x^9 = 56x^6$$

$$21. 5x^{-4} \cdot 2x^{-3} = 10x^{-7} = \frac{10}{x^7}$$

$$22. 9x^{-2} \cdot 6x^{-5} = 54x^{-7} = \frac{54}{x^7}$$

$$23. 3a^{-11} \cdot 17a^5 = 51a^{-6} = \frac{51}{a^6}$$

$$24. 11p^7 \cdot 4p^{-12} = 44p^{-5} = \frac{44}{p^5}$$

$$25. (-2x^2)^3(3x^{-1}y^2)^4 = -648x^2y^8$$

$$26. (4x^3)^2(-2x^{-3}y^{-1})^3 = -128x^{-3}y^{-3} = \frac{-128}{x^3y^3}$$

$$27. (3x^2y^{-3})^4(2x^{-4}y^5)^3 = 648x^{-4}y^3 = \frac{648y^3}{x^4}$$

$$28. (5a^3b^{-2})^4(5a^{-4}b^{-5})^{-2} = 25a^{20}b^2$$

$$29. (7a^{-5}b^6) \div (21a^4b^{-2}) = \frac{a^{-9}b^8}{3a^9} = \frac{b^8}{3a^9}$$

$$30. (1001x^{-4}y^{-3}) \div (77x^6y^{-7}) = 13x^{-10}y^4 = \frac{13y^4}{x^{10}}$$

$$31. \frac{5}{a^{-2}} - \frac{3}{a^{-1}} = 5a^2 - 3a$$

$$32. \frac{7}{x^{-5}} - \frac{4}{x^{-1}} = 7x^5 - 4x$$

$$33. \frac{x^{-1}y^{-4}z}{x^{-2}yz^{-3}} = xy^{-5}z^4 = \frac{xz^4}{y^5}$$

$$34. \frac{r^{-5}st^{-3}}{r^{-1}s^{-5}t} = r^{-4}s^6t^{-4} = \frac{s^6}{r^4t^4}$$

$$35. \frac{13x^5y^{-2}z^0}{39xy^{-3}z^2} = \frac{1x^4yz^{-2}}{3z^2} = \frac{x^4y}{3z^2}$$

$$36. \frac{3^4a^{-7}b^3d^{-4}}{43^0a^{-4}b^{-5}c^6} = 81a^{-3}b^8c^{-6}d^{-4} = \frac{81b^8}{a^3c^6d^4}$$

$$37. (3758x^{89})^{-53}(3758x^{89})^{53} = 1$$

$$38. (490x^{17}y^{23})^0 = 1$$

$$39. 3x^{-\frac{1}{2}} \cdot 4x^{\frac{2}{3}} = 12x^{\frac{1}{6}}$$

$$40. 5x^{-\frac{1}{2}} \cdot 6x^{\frac{1}{8}} = 30x^{-\frac{3}{8}} = \frac{30}{x^{\frac{3}{8}}}$$

$$41. (4x^{\frac{1}{2}})^3 \div (9x^{\frac{1}{3}})^{\frac{3}{2}} \rightarrow \text{Can't do yet}$$

$$42. (64x^2)^{-\frac{1}{6}}(32x^5)^{-\frac{2}{3}} \rightarrow \text{Can't do yet}$$

$$43. \frac{u^{3.7}p^{4.8}}{u^{-2.9}p^{1.8}} = u^{6.6}p^3$$

$$44. \frac{d^{-4.3}v^{1.5}}{d^{-3.7}v^{-2}} = d^{-0.6}v^{3.5} = \frac{v^{3.5}}{d^{0.6}}$$

$$45. \sqrt[4]{x^{12}y^7} = x^3y\sqrt[4]{y^3}$$

$$46. \sqrt[5]{m^{30}k^{32}} = m^6k^6\sqrt[5]{k^2}$$