

Simplify the expression.

Write the answer using positive exponents.

1) $(2p^3)^4$

Answer: $16p^{12}$

2) 12^0

Answer: 1

3) -14^0

Answer: -1

Simplify the expression.

Write the answer using positive exponents.

4) $(-7x^3)^2$

Answer: $49x^6$

5) $(w^3z)^2(w^4z^7)$

Answer: $w^{10}z^9$

6) $\left(\frac{3}{y^2}\right)^5$

Answer: $\frac{243}{y^{10}}$

7) $(-4)^{-2}$

Answer: $\frac{1}{16}$

8) $\left(\frac{xy^6}{z^6}\right)^0$

Answer: 1

9) $(3p)^{-3}$

Answer: $\frac{1}{27p^3}$

10) $-5x^{-4}y(5x^4y)z^4$

Answer: $-25y^2z^4$

11) $(7s + 14t) + (4t - 3s)$

Answer: $4s + 18t$

12) $(20x^4 + 11x^2) - (-13x^4 + 4x^2)$

Answer: $33x^4 + 7x^2$

13) $6xy(2x - 10y)$

Answer: $12x^2y - 60xy^2$

14) $(-5x - 10)(-3x - 10)$

Answer: $15x^2 + 80x + 100$

15) $(9x + 7y)(9x - 7y)$

Answer: $81x^2 - 49y^2$

16) $(7x + 9y)^2$

Answer: $49x^2 + 126xy + 81y^2$

17) $(6y + 11)(5y^2 - 2y - 10)$

Answer: $30y^3 + 43y^2 - 82y - 110$

18) $\left(\frac{12x^{-3}z^3}{3xz^{-3}}\right)^{-1}$

Answer: $\frac{x^4}{4z^6}$

19) $\frac{5^5 x^9}{5^9 x^3}$

Answer: $\frac{x^6}{5^4}$

20) $\frac{2^{-8}x^{-4}y^2}{2^{-5}x^{-7}y^4}$

Answer: $\frac{x^3}{8y^2}$

21) $(x^{-2}y^{-2})(x^5y^{-5})$

Answer: $\frac{x^3}{y^7}$

$$22) \quad \frac{8x^2 - 4x + 1}{32x}$$

$$\text{Answer: } \frac{x}{4} - \frac{1}{8} + \frac{1}{32x}$$

$$23) \quad \frac{64x^3 + 56x^2 - 40x + 3}{8x}$$

$$\text{Answer: } 8x^2 + 7x - 5 + \frac{3}{8x}$$

Divide using long division.

$$24) \quad (p^2 + 7p - 9) \div (p + 9)$$

$$\text{Answer: } p - 2 + \frac{9}{p + 9}$$

$$25) \quad \frac{x^2 + 4x - 32}{x + 8}$$

$$\text{Answer: } x - 4$$

$$26) \quad (16x^3 - 8x^2 - 7x - 1) \div (-4x - 1)$$

$$\text{Answer: } -4x^2 + 3x + 1$$