

1. Express as a single power.

a) $x^{12} \div x^5 =$ _____

b) $(-3)^{12} \div (-3)^3 =$ _____

c) $6^{10} \div 6 =$ _____

d) $2^9 \div 2^8 =$ _____

2. Express as a single power.

a) $5^4 \times 5^5 =$ _____

b) $(-7)^4 \times (-7)^8 =$ _____

c) $10^8 \times 10 =$ _____

d) $(x^7)(x^2)(x^8) =$ _____

e) $(-a) \times (-a)^3 =$ _____

f) $\left(\frac{3}{4}\right) \times \left(\frac{3}{4}\right) =$ _____

3. Express as a single power.

a) $(5^{10})^5 =$ _____

b) $[(-4)^2]^8 =$ _____

c) $(y^3)^5 =$ _____

d) $(x^8)^5 =$ _____

e) $(0.7^9)^4 =$ _____

f) $[(-2)^3]^7 =$ _____

4. Evaluate or simplify as required.

a) 10^4

b) -3^4

c) $(-2)^3$

d) $-(-5)^2$

e) $(-6)^4$

f) $\left(\frac{2}{3}\right)^3$

g) $-\left(\frac{3}{5}\right)^4$

h) $\left(\frac{1}{2}\right)^5$

i) $\left(-\frac{1}{6}\right)^2$

j) $\left(\frac{2}{5}\right)^9 \div \left(\frac{2}{5}\right)^9$

k) $\frac{-24t^4}{-3t^4}$

Answers:

1. a) x^7 b) $(-3)^9$ c) 6^9 d) $2^1 (= 2)$

2. a) 5^9 b) $(-7)^{12}$ c) 10^9 d) x^{17} e) $(-a)^4$ f) $\left(\frac{3}{4}\right)^2$

3. a) 5^{50} b) $(-4)^{16}$ c) y^{15} d) x^{40} e) $(0.7)^{36}$ f) $(-2)^{21}$

4. a) 10000 b) -81 c) -8 d) -25 e) 1296 f) $\frac{8}{27}$

g) $-\frac{81}{625}$ h) $\frac{1}{32}$ i) $\frac{1}{36}$ j) 1 k) 8