

Name: _____

1. Calculate without a calculator

(a) $2^2 \times 2^{12} \times 2^8 \times 2^{-20}$

(b) $2^2 \times 2^{12} \times 2^8 \times \left(\frac{1}{2}\right)^{20}$

(c) $5^2 \times 5^{30} \times 5^{-3} \div 25^{14}$

(d) $6^{-7} \times 36^4 \times 5^9 \div 25^4$

(e) $8^9 \times 2^{12} \times 2^{-38} \div 4$

(f) $3^2 \times 3^{12} \times 9^4 \div \left(\frac{1}{3}\right)^{-20}$

(g) $7^{16} \times 7^3 \times 7^{-2} \div 49^8$

(h) $8^9 \times 4^{12} \times 2^{-38} \div 16^3$

(i) $9^2 \times 3^{12} \times 3^8 \div \left(\frac{1}{3}\right)^{-20}$

(j) $\left(\frac{5}{3}\right)^{-20} \div 3^{20} \times 5^{21}$