



Name: _____



1) Write these numbers as a single power of 2, 3, 5 or 7:

a) 4		e) 16		i) $\frac{1}{25}$	
b) 9		f) $\frac{1}{9}$		j) $\frac{1}{27}$	
c) 25		g) $\frac{1}{5}$		k) $\frac{1}{16}$	
d) 125		h) $\frac{1}{49}$		l) $\frac{1}{343}$	

2) Write all these calculations as a single power of 2, 3 or 5:

a) 4×2		e) 32×4		i) $27^3 \div 9^7$	
b) 9×3^2		f) $27 \div \frac{1}{3}$		j) 16×16	
c) $2^4 \div 4$		g) $125 \times \frac{1}{5}$		k) $4^3 \div \frac{1}{16}$	
d) $3^3 \div 9$		h) $4^3 \div 2^2$		l) $8^2 \div \frac{1}{4}$	

3) Using laws of indices, find the value of x in these equations:

a) $9 \times 3^x = 81$		f) $3^x \times \frac{1}{3} = 27$	
b) $27 \times 3^2 = 3^x$		g) $16 \times 2^{2x+1} = 2^9$	
c) $2^x \div 8 = 16$		h) $3^{x+2} \div 9 = 27$	
d) $32 \div 2^x = 2^2$		i) $2^{10} \div 2^{2x} = 4$	
e) $\frac{32}{2^x} = \frac{1}{2^2}$		j) $\frac{81}{3^x} = \frac{1}{9}$	

Exam question:

- If $3^x = 81$, find the value of x .
- If $2^y = 32^{\frac{1}{2}}$, find the value of y .

