

EXERCISE 1

1. Complete the following table with base or index for the given numbers or algebraic terms.

5^3	$(-4)^7$	Base	Index	Base	index
$(\frac{1}{2})^{10}$	m^6	5			9
n^0	$(-\frac{3}{7})^4$		7	—	4
x^{20}	$(0.2)^9$	$\frac{1}{2}$		x	
$(2\frac{1}{3})^2$			6	$(\frac{—}{—})$	2
8		n		8	

2. Write the following repeated multiplications in index form.

a)	$5 \times 5 \times 5 \times 5 \times 5 \times 5$		g)	$0.3 \times 0.3 \times 0.3 \times 0.3$	
b)	$(-2) \times (-2) \times (-2)$		h)	$\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4}$	$(\frac{—}{—})$
c)	$m \times m \times m \times m \times m \times m \times m$		i)	$n \times n \times n \times n \times n \times n \times n \times n \times n$	
d)	$6 \times 6 \times 6 \times 6 \times 6$		j)	$(-m) \times (-m) \times (-m) \times (-m)$	
e)	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$	$(\frac{—}{—})$	k)	$0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5$	
f)	$1\frac{2}{3} \times 1\frac{2}{3} \times 1\frac{2}{3}$	$(\frac{—}{—})$	l)	$(-\frac{1}{n}) \times (-\frac{1}{n}) \times (-\frac{1}{n}) \times (-\frac{1}{n})$	$(\frac{—}{—})$

3. Convert the numbers or algebraic terms in index form into repeated multiplications (fill in with number 1 for unnecessary box)

a) $(-3)^3$

= x x x x x x

b) $(2.5)^4$

= x x x x x x

c) k^6

= x x x x x x

d) $(3n)^5$

= x x x x x x

EXERCISE 2

1. Calculate the value of each of the following numbers in index form

a) 9^4 =	b) $(-4)^5$ =	c) $(2.5)^3$ =	d) $(-3.2)^3$ =
e) $\left(\frac{3}{8}\right)^5$ = _____	f) $\left(-\frac{1}{6}\right)^4$ = _____	g) $\left(1\frac{2}{3}\right)^2$ = _____	h) $\left(-2\frac{1}{3}\right)^3$ = _____

2. Write each of the following numbers in index form using the stated base in brackets
(Fill in with symbol / for unnecessary box)

a) 810000 [base of 30]

Answer:

b) 64000 [base of 40]

Answer :

c) -0.00032 [base of -0.2]

Answer :

d) 15 625 [base of -5]

Answer :

e) -16 384 [base of -4]

Answer :

3. Simplify each of the following :

a) $7^5 \times 7 \times 7^4$ = =	b) $(-0.5)^5 \times (-0.5) \times (-0.5)$ = =
c) $5m^3 \times \frac{1}{5}m \times (-6)m^2$ = x x () x	d) $n \times \frac{3}{16}n^5 \times \frac{4}{3}n^3 \times n^2$ = x x

e)

$$2k^6 \times 50k \times \left(-\frac{1}{10}k^2\right)$$

$$= \quad \times \quad \times \quad \times \quad \times$$

$$=$$

d)

$$2p^7 \times (-p^5) \times 7p^2$$

$$= \quad \times (\quad) \times (\quad) \times$$

$$=$$