

6:02 | Negative Indices

Name: _____

Class: _____

Examples



A negative index means '1 over', ie $x^{-m} = \frac{1}{x^m}$

Change the sign of the index in each expression.

1 $d^{-2} = \frac{1}{d^2}$

2 $5^{-3} = \frac{1}{5^3}$
 $= \frac{1}{125}$

3 $\frac{1}{7} = 7^{-1}$

4 $\frac{1}{36} = \frac{1}{6^2}$
 $= 6^{-2}$

Exercise

1 Write down the value of:

a 4^{-1}

b 2^{-3}

c 3^{-2}

d 10^{-1}

e 5^{-2}

f 6^{-1}

g 8^{-2}

h 4^{-3}

i 7^{-2}

j 10^{-2}

k 13^{-1}

l 9^{-2}

m 12^{-2}

n 3^{-4}

o 8^{-3}

2 Write with a negative index, as in Example 3.

a $\frac{1}{4}$

b $\frac{1}{2^3}$

c $\frac{1}{3^2}$

d $\frac{1}{2}$

e $\frac{1}{4^3}$

f $\frac{1}{3^6}$

g $\frac{1}{10^2}$

h $\frac{1}{5^4}$

i $\frac{1}{7^6}$

j $\frac{1}{11^4}$

k $\frac{1}{20}$

l $\frac{1}{9^3}$

m $\frac{1}{19^8}$

n $\frac{1}{5^{10}}$

o $\frac{1}{12^6}$

3 Write with a negative index, as in Example 4.

a $\frac{1}{8}$

b $\frac{1}{121}$

c $\frac{1}{25}$

d $\frac{1}{27}$

e $\frac{1}{64}$

f $\frac{1}{49}$

g $\frac{1}{1000}$

h $\frac{1}{16}$

i $\frac{1}{81}$

j $\frac{1}{243}$

Fun Spot 6:02 | What sort of star is dangerous?



Use index laws to simplify each question.

Match the letters with the answers below.

A $y^3 \times y^5$

G $(y^3)^3$

H $y^{10} \div y^5$

I $(y^7)^2$

N $y^{10} \times y^5$

O $y^6 \div y^2$

R $y \times y^5$

S $y^3 \div y$

T $(y^2)^5$

y^8

y^2 y^5 y^4 y^4 y^{10} y^{14} y^{15} y^9

y^2 y^{10} y^8 y^6

22 Negative Indices

a $\frac{1}{4}$	b $\frac{1}{8}$	c $\frac{1}{9}$	d $\frac{1}{10}$	e $\frac{1}{25}$	f $\frac{1}{6}$	g $\frac{1}{64}$	h $\frac{1}{64}$
i $\frac{1}{49}$	j $\frac{1}{100}$	k $\frac{1}{13}$	l $\frac{1}{81}$	m $\frac{1}{144}$	n $\frac{1}{81}$	o $\frac{1}{512}$	
a 4^{-1}	b 2^{-3}	c 3^{-2}	d 2^{-1}	e 4^{-3}	f 3^{-6}	g 10^{-2}	h 5^{-4}
i 7^{-6}	j 11^{-4}	k 20^{-1}	l 9^{-3}	m 19^{-8}	n 5^{-10}	o 12^{-6}	
i 2^{-3}	b 11^{-2}	c 5^{-2}	d 3^{-3}	e 4^{-3}	f 7^{-2}	g 10^{-3}	h 2^{-4}
j 9^{-2}	j 3^{-5}						