

6:03 | Fractional Indices

Name: _____

Class: _____

Examples



- A fractional index means a root.
- $\frac{1}{2}$ means square root.
- $\frac{1}{3}$ means cube root.

Evaluate each expression.

1 $49^{\frac{1}{2}} = \sqrt{49}$
= 7

2 $100^{\frac{1}{2}} = \sqrt{100}$
= 10

3 $64^{\frac{1}{3}} = \sqrt[3]{64}$
= 4

4 $125^{\frac{1}{3}} = \sqrt[3]{125}$
= 5

Exercise

1 Simplify.

a $\sqrt{36}$

b $\sqrt{64}$

c $\sqrt{121}$

d $\sqrt{784}$

e $\sqrt[3]{216}$

f $\sqrt{25}$

g $\sqrt[3]{8}$

h $\sqrt[3]{1}$

i $\sqrt[3]{27}$

j $\sqrt[3]{343}$

k $\sqrt{256}$

l $\sqrt[3]{1000}$

m $\sqrt{1}$

n $\sqrt{144}$

o $\sqrt[3]{512}$

2 Evaluate.

a $36^{\frac{1}{2}}$

b $64^{\frac{1}{2}}$

c $121^{\frac{1}{2}}$

d $729^{\frac{1}{3}}$

e $8^{\frac{1}{3}}$

f $4^{\frac{1}{2}}$

g $27^{\frac{1}{3}}$

h $1331^{\frac{1}{3}}$

i $225^{\frac{1}{2}}$

j $441^{\frac{1}{2}}$

k $900^{\frac{1}{2}}$

l $3375^{\frac{1}{3}}$

m $324^{\frac{1}{2}}$

n $1728^{\frac{1}{3}}$

o $64^{\frac{1}{3}}$

p $16^{\frac{1}{4}}$

q $243^{\frac{1}{5}}$

r $256^{\frac{1}{4}}$

s $32^{\frac{1}{5}}$

t $128^{\frac{1}{7}}$

Fun Spot 6:03 | Why was the butcher worried?

Calculate each of these correct to the nearest whole number.

Match the letters with the answers below.

A $\sqrt{79}$

B $\sqrt[3]{84}$

E $\sqrt{119}$

H $\sqrt{40}$

I $\sqrt[3]{280}$

J $\sqrt[3]{560}$

K $\sqrt{500}$

O $\sqrt[3]{22}$

S $\sqrt[3]{120}$

T $\sqrt{750}$

W $\sqrt[3]{900}$

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6 7 5

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8 3 4

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10 9 5

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9 27

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5 27 11 9 22

fun spot



03 Fractional Indices

a 6	b 8	c 11	d 28	e 6	f 5	g 2	h 1
i 3	j 7	k 16	l 10	m 1	n 12	o 8	
a 6	b 8	c 11	d 9	e 2	f 2	g 3	h 11
i 15	j 21	k 30	l 15	m 18	n 12	o 4	p 2
q 3	r 4	s 2	t 2				