

Exponential equations

1

a

i $2^{3x} = 2^2$

ii $x = \frac{2}{3}$

b

i $2^{4x} = 2^{-1}$

ii $x = -\frac{1}{4}$

c

i $2^{-10} = 2^{2x}$

ii $x = -5$

d

i $2^{\frac{x}{2}} = 2$

ii $x = 2$

2

a $x = 8$

b $x = \frac{2}{9}$

c $x = 3$

d $x = 0$

e $x = -2$

f $y = -3$

g $x = -2$

h $x = 6$

i $x = -3$

j $x = \frac{4}{3}$

k $x = 6$

l $x = 0$

m $x = -2$

n $x = -4$

o $y = 2$

3

a $y = \frac{3}{2}$

b $y = \frac{3}{2}$

c $x = 2$

d $x = 2$

e $x = 8$

f $x = 2$

g $x = 2$

h $x = 5$

i $x = 1$

j $x = 1 + \frac{2k}{3}$

k $x = 5$

l $x = \frac{5}{2}$

m $x = 4, -1$

n $x = 3$

o $x = \frac{4}{1+n}$

p $x = 5$

q $x = 1$

r $x = \frac{2}{3} + \frac{2k}{3}$

4

a $x = \frac{1}{3}$

b $n = \frac{1}{3}$

c $x = \frac{1}{2}$

d $x = \frac{1}{4}$

e $x = \frac{1}{9}$

f $y = 4$

g $y = 4$

h $k = -2$

i $n = \frac{1}{4}$

5

a $x = 9$

b $x = -3$

c $x = \frac{7}{3}$

d $x = -7$

e $x = \frac{21}{19}$

f $y = \frac{11}{6}$

g $x = -\frac{41}{6}$

h $x = 1$

i $x = -\frac{35}{6}$

j $x = \frac{11}{3}$

k $x = -\frac{11}{3}$

l $x = -2$