Negative integer indices and the power of zero

Maths

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Negative integer indices and the power of zero

1. Fill in the blanks to complete the sequence.

$5^3 = 125$

$\div 5$

$5^2 = \boxed{}$

$\div 5$

$5^1 = 5$

$\div 5$

$5^0 = \boxed{}$

$\div 5$

$5^{\boxed{}} = \dfrac{1}{5}$

$\div 5$

$5^{-2} = \boxed{}$

$\div 5$

$5^{\boxed{}} = \dfrac{1}{125}$

2. Evaluate the following.

a) 4^{-1}

b) 3^{-3}

c) 1675^0

d) $5^2 + 5^0$

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3. Write each of the following in the form 3^n

a) $\dfrac{1}{27}$

b) $\dfrac{1}{3}$

c) 9

d) 1

4. Write each of the following in index form.

a) $\dfrac{1}{a^3}$

b) $\dfrac{1}{b^{10}}$

c) r

d) $\dfrac{1}{t^y}$

Answers

Negative integer indices and the power of zero

1. Fill in the blanks to complete the sequence.

$5^3 = 125$

$\div 5$

$5^2 = 25$

$\div 5$

$5^1 = 5$

$\div 5$

$5^0 = 1$

$\div 5$

$5^{-1} = \dfrac{1}{5}$

$\div 5$

$5^{-2} = \dfrac{1}{25}$

$\div 5$

$5^{-3} = \dfrac{1}{125}$

2. Evaluate the following.

a) 4^{-1} $\dfrac{1}{4}$

b) 3^{-3} $\dfrac{1}{27}$

c) 1675^0 1

d) $5^2 + 5^0$ 26

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3. Write each of the following in the form 3^n

a) $\dfrac{1}{27}$ 3^{-3}

b) $\dfrac{1}{3}$ 3^{-1}

c) 9 3^2

d) 1 3^0

4. Write each of the following in index form.

a) $\dfrac{1}{a^3}$ a^{-3}

b) $\dfrac{1}{b^{10}}$ b^{-10}

c) r r^1

d) $\dfrac{1}{t^y}$ t^{-y}