

Indices Rules - Advanced

Name:	Class:	Date:
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Mark	/ 24	%
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1) Evaluate, giving your answer as a simplified fraction [3]

a) 20^{-1}

b) 2^{-2}

c) 10^{-3}

2) Give your answer in the form $\frac{1}{a^b}$, where a and b are positive integers [1]

$$6^{-4}$$

3) Give your answer in the form a^b , where a and b are integers [1]

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

4) Give your answer in the form $\frac{a}{b^c}$, where a,b and c are positive integers [1]

$$2 \times 5^{-2}$$

5) Give your answer in the form $\frac{a}{b^c}$, where a,b and c are integers [1]

$$-1 \times 5^{-3}$$

6) Evaluate [4]

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

b) $125^{\frac{1}{3}}$

c) $125^{\frac{2}{3}}$

d) $4^{\frac{3}{2}}$

7) Evaluate, giving your answer as an integer or simplified fraction [3]

a) $100^{-\frac{1}{2}}$

b) $\left(\frac{8}{7}\right)^3$

c) $\left(\frac{10}{3}\right)^{-3}$

8) Evaluate the following, giving your answer as a simplified fraction [2]

a) $\left(\frac{27}{1000}\right)^{\frac{2}{3}}$

b) $\left(\frac{125}{8}\right)^{-\frac{2}{3}}$

9) Give the following expression in index form [5]

a) $\sqrt{3}$

b) $\sqrt[3]{6}$

c) $\sqrt[5]{3}$

d) $\sqrt{2^3}$

e) $\frac{1}{\sqrt[3]{7}}$

10) Show the following as a power of 10 [1]

100

11) Show the following as a power of 2 [1]

4^{-2}

12) Show the following as a power of 5 [1]

$25^{\frac{3}{2}}$

Solutions for the assessment Indices Rules - Advanced

1) a) $\frac{1}{20}$

b) $\frac{1}{4}$

c) $\frac{1}{1000}$

2) $\frac{1}{6^4}$

3) 7^{-6}

4) $\frac{2}{5^2}$

5) $-\frac{1}{5^3}$

6) a) 6

b) 5

c) 25

d) 8

7) a) $\frac{1}{10}$

b) $\frac{512}{343}$

c) $\frac{27}{1000}$

8) a) $\frac{9}{100}$

b) $\frac{4}{25}$

9) a) $3^{\frac{1}{2}}$

b) $6^{\frac{1}{3}}$

c) $3^{\frac{1}{5}}$

d) $2^{\frac{3}{2}}$

e) $\frac{1}{7^{\frac{1}{3}}}$ or $7^{-\frac{1}{3}}$

10) 10^2

11) 2^{-4}

12) 5^3