Corbett maths

Negative Indices

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Examples

Workout

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Question 1: Evaluate each of the following

(a) 5^{-2} (b) 2^{-1} (c) 2^{-3} (d) 4^{-2} (e) 3^{-3} (f) 6^{-1}

(g) 10^{-2} (h) 2^{-4} (i) 9^{-2} (j) 3^{-4} (k) 10^{-1} (l) 7^{-2}

(m) 2^{-5} (n) 5^{-3} (o) 2^{-6} (p) 10^{-4} (q) 6^{-3} (r) 10^{-6}

Question 2: Write each of the following in index form.

(a) $\frac{1}{5^2}$ (b) $\frac{1}{3^4}$ (c) $\frac{1}{8^3}$ (d) $\frac{1}{4^5}$ (e) $\frac{1}{10^3}$ (f) $\frac{1}{2^6}$

Question 3: Write each of the following in the form 2^n

(a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) $\frac{1}{32}$ (d) $\frac{1}{8}$ (e) $\frac{1}{64}$ (f) $\frac{1}{256}$

Question 4: Write each of the following in the form 5^n

(a) $\frac{1}{125}$ (b) $\frac{1}{25}$ (c) $\frac{1}{5}$ (d) $\frac{1}{3125}$ (e) $\frac{1}{625}$ (f) $\frac{1}{15625}$

Question 5: Write each of the following as fractions

(a) a^{-2} (b) y^{-1} (c) w^{-4} (d) 2^{-x} (e) 5^{-a} (f) x^{-n}

Question 6: Write each of the following in index form

(a) $\frac{1}{w^2}$ (b) $\frac{1}{2^y}$ (c) $\frac{1}{x^5}$ (d) $\frac{1}{4^x}$ (e) $\frac{1}{y^x}$ (f) $\frac{1}{m^n}$

Question 7: Write each of the following as fractions

(a) $5y^{-2}$ (b) $8c^{-1}$ (c) $(5x)^{-2}$ (d) $(2y)^{-3}$ (e) $2x^{-3}$ (f) $(10w)^{-3}$

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Question 8: Write each of the following in index form

(a) $\frac{3}{x^2}$ (b) $\frac{5}{w^8}$ (c) $\frac{2}{3y^2}$ (d) $\frac{1}{4x^3}$ (e) $\frac{6}{y^m}$ (f) $\frac{a}{x^n}$

Question 9: Write each of the following as fractions

(a) $100^{-\frac{1}{2}}$ (b) $25^{-\frac{1}{2}}$ (c) $9^{-\frac{1}{2}}$ (d) $8^{-\frac{1}{3}}$ (e) $125^{-\frac{1}{3}}$ (f) $16^{-\frac{1}{4}}$

Question 10: Write each of the following as fractions

(a) $8^{-\frac{2}{3}}$ (b) $25^{-\frac{3}{2}}$ (c) $64^{-\frac{2}{3}}$ (d) $4^{-\frac{5}{2}}$ (e) $81^{-\frac{3}{4}}$ (f) $100000^{-\frac{2}{5}}$

Apply

Question 1: Arrange in order from smallest to largest.

$\frac{1}{50}$ 5^{-2} $\frac{3}{10}$ 2^{-3}

Question 2: Work out

(a) $4^{-2} \times 3^2$ (b) $10^{-1} \div 5^{-2}$ (c) $2^{-2} + 3^{-2} \times 2^3$

Question 3: Sally has completed her homework.
Can you spot any mistakes?

Question 1

Evaluate

4^{-2}

-16

Question 2

Work out

10^{-3}

$\frac{1}{30}$

Question 4: Given that $2^m + 2^n = \frac{9}{32}$

Work out mn

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Question 5:

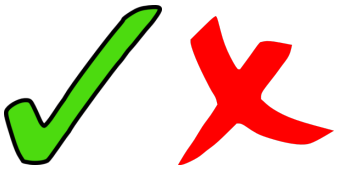
$$x^{-2} \quad x^{0} \quad x \quad x^{3}$$

Put the expressions above in order, from smallest to largest, when:

(a) x = 2 (b) x = 1 (c) x = 0.5 (d) x = −0.5

(e) x = −1 (f) x = −2

Answers



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