Corbett maths

Laws of Indices

Video 174 on Corbettmaths

Examples

Workout

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Question 1: Write as a single power of 2.

(a) $2^2 \times 2^2$ (b) $2^2 \times 2^3$ (c) $2^6 \times 2^2$ (d) $2^4 \times 2^3$ (e) $2^6 \times 2^8$ (f) $2^2 \times 2$ (g) 2×2^4

(h) $2^8 \times 2^8$ (i) $2^9 \times 2^2$ (j) 2×2^8 (k) $2^6 \times 2^5$ (l) $2^2 \times 2^2 \times 2^2 \times 2^2$

Question 2: Write as a single power of 5.

(a) $5^5 \div 5^2$ (b) $5^8 \div 5^3$ (c) $5^9 \div 5^2$ (d) $5^7 \div 5^5$ (e) $5^3 \div 5$ (f) $5^8 \div 5$ (g) $5^7 \div 5^4$

(h) $5^9 \div 5^3$ (i) $5^4 \div 5^8$ (j) $5 \div 5^3$ (k) $5^{45} \div 5^5$ (l) $5^3 \div 5^3$

Question 3: Write as a single power of 3.

(a) $\frac{3^5}{3^2}$ (b) $\frac{3^{10}}{3^5}$ (c) $\frac{3^8}{3^3}$ (d) $\frac{3^{20}}{3^5}$

(e) $\frac{3^7}{3^7}$ (f) $\frac{3^2}{3^4}$ (g) $\frac{3^{15}}{3^9}$ (h) $\frac{3^3}{3^8}$

Question 4: Write as a single power of 8.

(a) $(8^5)^2$ (b) $(8^3)^2$ (c) $(8^4)^3$ (d) $(8^5)^4$ (e) $(8^3)^6$ (f) $(8^7)^3$ (g) $(8^6)^6$

(h) $(8^9)^2$ (i) $(8^4)^8$ (j) $(8^3)^{-5}$ (k) $(8^{-5})^2$

Question 5: Write as a single power of y.

(a) $y^7 \times y^3$ (b) $y^9 \div y^7$ (c) $y^6 \div y^2$ (d) $(y^3)^5$ (e) $y^7 \div y$ (f) $y^3 \div y^7$ (g) $(y^9)^5$

(h) $y^6 \times y^7$ (i) $y^6 \times y^5 \times y^2$ (j) $y^8 \times y \times y^3$ (k) $\frac{y^8}{y^5}$

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Apply

Question 1: Can you spot any mistakes?

$2^6 \times 2^3 = 4^9$

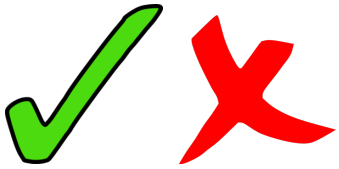
$7^{15} \div 7^5 = 7^3$

$6^3 \times 6^4 = 6^{12}$

Question 2: Find three different pairs of values for m and n.

$c^m \times c^n = c^8$

Answers



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