

Indeks

Standard Pembelajaran

- 1.2.5 Menentu dan menyatakan hubungan antara indeks pecahan dengan punca kuasa dan kuasa
- 1.2.6 Melaksanakan operasi yang melibatkan hukum indeks.
- 1.2.7 Menyelesaikan masalah yang melibatkan hukum indeks

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Hitung nilai setiap yang berikut

$$\begin{aligned}
 1) & \frac{81^{\frac{1}{2}} \times 2^3 \times 64^{\frac{1}{3}}}{(3^9 \times 2^9)^{\frac{1}{3}} \times 2^4} \\
 &= \frac{3^4 \left(\frac{1}{2}\right) \times 2^3 \times 2^{6\left(\frac{1}{3}\right)}}{3^3 \times 2^3 \times 2^4} \\
 &= \frac{3^2 \times 2^3 \times 2^2}{3^3 \times 2^3 \times 2^4} \\
 &= \frac{3^2 \times 2^5}{3^3 \times 2^7} \\
 &= 3^{2-3} \times 2^5 \\
 &= 3^{-1} \times 2^{-2} \\
 &= \frac{1}{3 \times 2^2} \\
 &= \frac{1}{3 \times 4} \\
 &= \frac{1}{12}
 \end{aligned}$$

Tips

Tukarkan nombor berikut kepada asas yang sama dengan pendaraban. Contoh:-

$$81 \rightarrow 3^4$$

Arahan	Paparan Skrin Kalkulator
8 1 = SHIFT 1/x	81 $\sqrt[3]{}$ 3 ⁴

$$64 \rightarrow 2^6$$

Arahan	Paparan Skrin Kalkulator
6 4 = SHIFT 1/x	64 $\sqrt[2]{}$ 2 ⁶

Semak guna kalkulator saintifik

Arahan	Paparan Skrin Kalkulator
CE 8 1 x^{1/2} CE 1 ▼ 2 ▶ ▶ x 2 SHIFT x² x 6 4 x^{1/3} CE 1 ▼ 3 ▼ (3 x^{1/3} 9 ▶ x 2 x^{1/3} 9 ▶) x^{1/3} CE 1 ▼ 3 ▶ ▶ x 2 x^{1/3} 4 =	$ \frac{81^{\frac{1}{2}} \times 2^3 \times 64^{\frac{1}{3}}}{(3^9 \times 2^9)^{\frac{1}{3}} \times 2^4} = \frac{1}{12} $

$$\begin{aligned} 2) & \frac{{}^3\sqrt{125} \times {}^4\sqrt{256} \times (5^6 \times 2^3)^{\frac{1}{3}}}{5^2 \times 64} \\ &= \frac{5^3(\frac{1}{3}) \times 2^6(\frac{1}{4}) \times 5^2 \times 2}{5^2 \times 2^6} \\ &= \frac{5 \times 2^2 \times 5^2 \times 2}{5^2 \times 2^6} \\ &= \frac{5^3 \times 2^3}{5^2 \times 2^6} \\ &= 5^{3-2} \times 2^{3-6} \\ &= 5 \times 2^{-3} \\ &= \frac{5}{2^3} \\ &= \frac{5}{8} \end{aligned}$$

Tips

Tukarkan nombor berikut kepada asas yang sama dengan pendaraban. Contoh:-

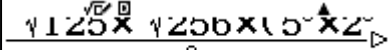
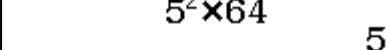
$$125 \rightarrow 5^3$$

Arahan	Paparan Skrin Kalkulator
1 2 5 = SHIFT ←	125 ✓⁰ ▲ 5³

$$256 \rightarrow 2^8$$

Arahan	Paparan Skrin Kalkulator
2 5 6 = SHIFT ←	256 2⁸

Semak guna kalkulator saintifik

Arahan	Paparan Skrin Kalkulator
       	
       	
       	
       	
      	

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$$3) \frac{64^{\frac{1}{3}} \times 2401^{\frac{3}{4}} \times 16^{\frac{1}{2}}}{(4^{-6} \times 7^4)^{\frac{1}{2}}}$$

Jawapan : 7168

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