



التمرين الثاني

اكتب في صيغة قوة

$$\begin{aligned}
 & 7^{10} \times \sqrt{7}^{-4} \times \sqrt{7}^{-8} \quad ; \quad \left(\frac{3}{\sqrt{11}}\right)^{12} \times \left(\frac{\sqrt{3}}{\sqrt{11}}\right)^{-12} \quad ; \quad \sqrt{27}^9 \times \sqrt{3}^{-5} \\
 & a = 3^5 \times \left(\frac{1}{\sqrt{3}}\right)^5 \quad \Bigg| \quad b = [(-2)^3]^4 \times 2^{-11} \quad \Bigg| \quad c = \left(\frac{2}{\sqrt{3}}\right)^7 \times \left(\frac{\sqrt{3}}{2}\right)^5 \\
 & (7)^{-3} \times \pi^{-6} ; \frac{(\sqrt{3})^{-5}}{(\sqrt{3})^4} ; [\pi^{-2}]^{-3} \times \pi^{-5} ; (\sqrt{5})^{-3} \times (\sqrt{5})^{-7} ; (\sqrt{2})^{-3} \times (\sqrt{3})^{-3} \\
 & \frac{625}{16} \times \left(\frac{2}{5}\right)^7 \quad \frac{4\sqrt{2}}{3^5} \quad (\sqrt{7})^{-3} \times 7^5 \\
 & \sqrt{27} \times (\sqrt{3})^{-7} \quad \left(\frac{\sqrt{10}}{3}\right)^{-3} \times \left(\frac{3}{\sqrt{5}}\right)^{-3} \quad 5^{-2} \times (\sqrt{5})^7 \\
 & \frac{(10^{-2})^3 \times 10^5}{(0.001)^2 \times 1000} \quad \frac{(\sqrt{2})^{-3} \times (\sqrt{8})^{-7}}{(\sqrt{2})^2 \times (\sqrt{8})^{-2}} \quad ; \quad (\pi^{-2})^{-3} \times \pi^{-5} \quad \frac{(a^{-3})^{-4} \times a^{-7}}{(a^5 \times a)^{-2}} \\
 & \cdot 3^4 \times \sqrt{3}^{-4} \times 16 \quad \text{ـج} \quad \cdot \left(\frac{\sqrt{3}}{2}\right)^{-6} \times \left(\frac{2}{\sqrt{3}}\right)^{-12} \quad \text{ـب} \quad \cdot \pi^5 \times \left(\frac{1}{\sqrt{\pi}}\right)^5 \quad \text{ـا} \\
 & E = \left(\frac{2}{\sqrt{5}}\right)^{-4} \times \left(-\frac{5\sqrt{5}}{8}\right) \quad \text{و} \quad F = \left(\frac{\sqrt{7}}{2}\right)^{-3} \times \left(-\frac{2}{\sqrt{7}}\right)^{-6} \\
 & \quad \text{و} \quad I = \frac{(0.01)^{-2} \times 100^{-3}}{\left(\frac{1}{10}\right)^{-3} \times (0.001)^{-7}} \quad \text{و} \quad J = \frac{25^{-3} \times 2^{-5}}{5^4} \quad \text{و} \quad K = \frac{2^4}{(5^5)^{-2}} \times \frac{1}{\sqrt{2}^{-2}} \\
 & 10^{-2} \times \frac{0,0001 \times (10^{-1})^{-5}}{\left(\frac{1}{100}\right)^3} \quad (\sqrt{5})^{-7} \times (-5)^{13} \quad \frac{10^{-5} \times 3000}{0,00003 \times 10^6} \\
 & \left(\frac{2}{\sqrt{3}}\right)^{-5} \times \left(-\frac{\sqrt{3}}{2}\right)^{-6} \quad \frac{\sqrt{11}^{40} \times \sqrt{5}^{19}}{\sqrt{5}^{-21}} \quad 5^{10} \times \sqrt{5}^{-30} \quad \sqrt{6}^{11} \times (-\sqrt{6})^{-48} \quad \left(-\frac{7\sqrt{7}}{8}\right) \\
 & (-\pi)^3 \times (\pi)^{-6} \quad \frac{(0.01)^{-2} \times 100^{-3}}{\left(\frac{1}{10}\right)^{-2} \times (0.001)^{-4}} \quad \frac{2^4}{(5^5)^{-2}} \times \frac{1}{\sqrt{2}^{-2}} \quad \frac{25^{-2} \times 2^{-10}}{5^4} \\
 & \frac{6^4}{(6^5)^{-2}} \times \frac{1}{\sqrt{6}^{-2}} \quad \frac{(0.01)^{-2} \times 300^{-3}}{\left(\frac{3}{10}\right)^{-3} \times (0.01)^7} \\
 & \left(\frac{\sqrt{6}}{7}\right)^4 \times \left(\frac{7}{\sqrt{2}}\right)^4 \quad , \quad \sqrt{8} \times (\sqrt{2})^{-7} \quad , \quad 3^{-5} \times (\sqrt{3})^8 \\
 & \frac{(\sqrt{2})^{-7} \times (\sqrt{3})^3}{(\sqrt{2})^{-5} \times (\sqrt{3})^5} \quad , \quad \frac{(\sqrt{6})^{-3} \times (\sqrt{6})^7}{(\sqrt{2})^4} \quad , \quad \frac{(\frac{\sqrt{8}}{2})^{-3}}{(\frac{\sqrt{2}}{3})^{-3}} \quad , \quad \frac{(\frac{\sqrt{5}}{3})^{-5}}{(\frac{\sqrt{5}}{3})^{-3}} \\
 & \left(-\frac{3}{5}\right)^{-5} \times (-\sqrt{5})^{-5} \times \left(\frac{\sqrt{5}}{2}\right)^{-5} \quad , \quad (-\sqrt{7})^5 \times \left(\frac{2\sqrt{7}}{7}\right)^5 \quad , \quad (2\pi)^{-11} \times \left(\frac{1}{4\pi}\right)^{-11} \quad , \quad \left(-\frac{5}{3}\right)^{-4} \times \left(-\frac{3}{7}\right)^{-4}
 \end{aligned}$$

$$\left(\frac{\sqrt{11}}{3}\right)^{16} \times \left[\left(-\frac{\sqrt{11}}{2}\right)^2\right]^8 \times \left[\left(\frac{3}{11}\right)^{-4}\right]^{-4}, \left[\left(\frac{\sqrt{3}}{2}\right)^2\right]^6 \times \left[(\sqrt{3})^{-3}\right]^{-4}, \left[\left(\frac{\sqrt{5}}{3}\right)^{-3}\right]^{-4}, \left[(-\sqrt{3})^{-2}\right]^7, \left[\left(-\frac{8}{7}\right)^3\right]^{-5}$$

$$\left(\frac{1}{\sqrt{11}}\right)^{-8} \times (\sqrt{13})^8; (0.5)^{-3}; \left(\frac{1}{\sqrt{7}}\right)^{-10}; (-\sqrt{2})^{12}; \sqrt{3}^4$$

$$\left(-\frac{\sqrt{5}}{2}\right) \times \left(\frac{\sqrt{5}}{2}\right)^{-12}, (-\sqrt{3})^5 \times (-\sqrt{3})^{-7}$$

$$\left(\frac{\sqrt{5}}{\pi}\right)^{-6} \times \left(-\frac{\sqrt{5}}{2}\right)^{-5} \times \left(\frac{\pi}{2}\right)^{-6}, \left(\frac{4}{3}\right)^6 \times \left(\frac{3}{4}\right)^{-3}$$

$$\frac{(-3\sqrt{15})^{-7}}{(-2\sqrt{3})^{-7}}, \frac{(-9\pi)^{12}}{(3\pi)^{12}}, \frac{(-\sqrt{24})^{-11}}{(-\sqrt{8})^{-11}}, \left(\frac{-1}{2}\right)^9, \frac{8^{-4}}{2^{-4}}$$

$$\left(\frac{\sqrt{3}}{6}\right)^{-5}; \left(\frac{17}{3}\right)^{-3} \times \left(-\frac{2}{17}\right)^{-3}; \left[(\sqrt{5})^4\right]^2 \times (-\pi)^8; \sqrt{3}^5 \times (\sqrt{3})^{-7}; \frac{(-\sqrt{2})^{-8}}{(\sqrt{2})^9}; \left(\frac{49}{13}\right)^2 \times \left(\frac{52}{7}\right)^2$$

ج-  $\sqrt{2}^6 \times \sqrt{5}^6$       ب-  $(-\pi^3)^{-8}$       ا-  $\sqrt{3}^2 \times \sqrt{3}^{-4}$

ف-  $[(-2)^3]^4 \times 2^{-11}$       ه-  $\left(\frac{2}{\sqrt{3}}\right)^7 \times \left(\frac{\sqrt{3}}{2}\right)^5$       د-  $\frac{\pi^3}{\pi^{-5}}$

ع-  $7^{10} \times \sqrt{7}^{-4} \times \sqrt{7}^{-8}$       ن-  $\frac{\left(\frac{3}{\sqrt{5}}\right)^{-3}}{\left(\frac{36}{2\sqrt{5}}\right)^{-3}}$       م-  $3^5 \times \left(\frac{1}{\sqrt{3}}\right)^5$

### التمرين الثالث

اختصر

$$\frac{a^{-2} \times b^{-1} \times (a \times b^3)^{-4}}{a \times b^2 \times (a^4)^{-3}}$$

$$\frac{a^{-2} \times a \times a^5}{(a^2)^{-2}}$$

$$\frac{(a^3 b^{-2})^7 b^{-7}}{(a^4 b^{-3})^6}$$

$$\frac{(0,001)^{-2} \times 10^5}{\left(\frac{1}{10}\right)^{-3} \times 10^{-2}}$$

$$d = \frac{0,25 \times 10^{-5}}{\sqrt{5} \times 10^{-4}}$$

$$e = \frac{0,0002 \times 10^6}{\sqrt{2} \times 10^{-4}}$$

$$\frac{(ab)^3(ab^2)^{-2}}{(-a^2b^3)^2(a^{-4}b)^3} \quad \frac{(a^2b^{-1})^3}{(a^{-4}b^2)^{-2}} \quad \frac{(0,01)^{-2} \times 10^2 \times 10^{-3}}{0,1 \times 1000}$$

$$\frac{(a^{-3}b^{-4})^2 \times (a^2b^{-3})}{a^4 \times (a^{-2}b^{-3})^3} \quad \frac{(a\sqrt{3})^3 \times b^{-2} \times (3ab)^2}{81 \times (ba^{-2})^{-4} \times (a^3b^{-4})^{-1}} \quad \frac{(2a^{-2})^{-3} \times (ab^5)^2 \times (b^{-3})^2}{8^{-1} \times (a^2b)^4}$$

$$\frac{0,21 \times 10^{-9}}{9 \times 10^{-4}} \quad ; \quad \frac{ab^{-2}(a^{-1}b^{-2})^3 a^2 b^{-1}}{a^2 b (a^2 b^{-1})^4 a^{-3} b^2}$$

التمرين الرابع

اختر الاجابة الصحيحة

العدد  $\frac{25}{\sqrt{5}^{-3}}$  يساوي:

(أ)  $\sqrt{5}$  (ب)  $2\sqrt{5}^5$  (ج)  $\sqrt{5}^7$

(أ)  $(\sqrt{2})^{-4}$  يساوي: (ب)  $\frac{1}{4}$  (ج)  $-\frac{1}{4}$

العدد  $\sqrt{2}^{18} + \sqrt{2}^{18}$  يساوي

(أ)  $-\sqrt{2}^{36}$  (ب)  $.2^{10}$  (ج)  $.2^{18}$

العدد  $(\frac{-\sqrt{3}}{2})^{-2}$  يساوي: (أ)  $\frac{3}{4}$  (ب)  $-\frac{4}{3}$  (ج)  $\frac{4}{3}$

العدد  $2\sqrt{5}^{-4}$  يساوي: (أ)  $\frac{2}{25}$  (ب)  $50$  (ج)  $\frac{1}{50}$

$(-\frac{3}{\sqrt{2}})^{-3}$  يساوي: (أ)  $-\frac{2\sqrt{2}}{27}$  (ب)  $-3\sqrt{2}$  (ج)  $\frac{2\sqrt{2}}{27}$

$(-\sqrt{5})^5$  يساوي: (أ)  $-5\sqrt{5}$  (ب)  $-25\sqrt{5}$  (ج)  $\frac{1}{\sqrt{5}^5}$

$\sqrt{3}^2 + \sqrt{3}^4$  يساوي: (أ)  $\sqrt{3}^6$  (ب)  $12$  (ج)  $\sqrt{6}^6$

يساوي  $\left(-\frac{\sqrt{2}^2}{2}\right)^3$

(أ)  $\left(-\frac{1}{2}\right)^3$  (ب)  $(-1)$  (ج)  $\left(-\frac{\sqrt{2}}{2}\right)^6$

العدد  $4\sqrt{2}$  يساوي: (أ)  $(\sqrt{2})^3$  (ب)  $(\sqrt{2})^4$  (ج)  $(\sqrt{2})^5$

العبرة  $6\sqrt{3}^{-2}$  تساوي: (أ)  $18$  (ب)  $2$  (ج)  $3$

العبرة  $(-\sqrt{5}^2)^3$  يساوي: (أ)  $-125$  (ب)  $125$  (ج)  $-5^6$

العبرة  $2^{-2} + 2^{-2}$  تساوي: (أ)  $2^{-1}$  (ب)  $2^{-3}$  (ج)  $2^{-4}$

العبرة  $\left(-\left(\frac{2}{5}\right)^2\right)^3$  تساوي: (أ)  $\left(-\left(\frac{2}{5}\right)^3\right)^2$  (ب)  $\left(-\left(\frac{2}{5}\right)^{-2}\right)^{-3}$  (ج)  $\left(\left(-\frac{2}{5}\right)^2\right)^3$

العدد  $(-\sqrt{3})^{-4}$  يساوي :  $\square^{-3}$        $\square^{-\frac{1}{9}}$        $\square^{\frac{1}{9}}$

$\square^{\sqrt{2}^{10}}$        $\square^{2^7}$        $\square^{\sqrt{2}^6}$       العدد  $\sqrt{2}^5 + \sqrt{2}^5$  يساوي .

$\square^{\left(\frac{-2}{\sqrt{3}}\right)^5}$        $\square^{\left(\frac{2}{\sqrt{3}}\right)^5}$        $\square^{\left(\frac{\sqrt{3}}{2}\right)^5}$  : يساوي  $\left(\frac{-\sqrt{3}}{2}\right)^5$

العدد  $-2\sqrt{3}^2$  يساوي **أ - 6**      **ب - 6**      **ج - 12**  
 العبارة  $(5\sqrt{17})^3 \times (25\sqrt{17})^4$  تساوي  $5^5\sqrt{17}$        $5\sqrt{17}$        $25\sqrt{17}$       يساوي  $\frac{3^2}{4^4}$

**أ -**  $\left(\frac{\sqrt{3}}{4}\right)^4$       **ب -**  $\left(\frac{\sqrt{3}}{2}\right)^4$       **ج -**  $\left(\frac{3}{4}\right)^0$   
 العدد  $2\sqrt{2}^{-2}$  يساوي **أ -**  $\frac{1}{4}$       **ب -**  $\frac{1}{2}$       **ج -**  $\frac{1}{8}$   
 العدد  $(-\sqrt{2}^{-2})$  يساوي **أ -**  $\frac{1}{2}$       **ب -**  $2$       **ج -**  $-\frac{1}{2}$   
 العدد  $10 \times 10^{-6}$  يساوي **أ -**  $10^{-5}$       **ب -**  $100^{-6}$       **ج -**  $10^{-7}$   
 العدد  $\frac{1}{\sqrt{3}^{-4}}$  يساوي **أ -**  $-\frac{1}{9}$       **ب -**  $\frac{1}{9}$       **ج -**  $9$

الجزء  $\frac{9}{2} \times \left(\frac{3}{\sqrt{2}}\right)^{-10}$  يساوي :  $\square^{\left(\frac{3}{\sqrt{2}}\right)^{12}}$        $\square^{\left(\frac{3}{\sqrt{2}}\right)^{-10}}$        $\square^{\left(\frac{3}{\sqrt{2}}\right)^{20}}$

اجب بصحيح أو خطأ واضعاً العلامة (X) في الخانة المناسبة

خطأ	صحيح
	$-a^2 = (-a)^2$
	$-a^3 = (-a)^3$
	$(-2)^{-3} = 2^3$
	$\left(\frac{a}{b}\right)^n = \left(\frac{b}{a}\right)^{-n}$

أكمل بـ صحيح أو خطأ

	$\left(\frac{\sqrt{2}}{7}\right)^{-3} = \left(-\frac{\sqrt{2}}{7}\right)^3$
	$(\sqrt{7})^{-3} \times (\sqrt{7})^2 = (\sqrt{7})^{-6}$
	$\left(\frac{\sqrt{2}}{3}\right)^8$ هو مقلوب العدد $\left(\frac{\sqrt{2}}{3}\right)^{-8}$
	$0.0128 = 128 \times 10^{-4}$

$27 \times (\sqrt{3})^{-5} = \sqrt{3}$	$7 \times (\sqrt{3})^{15} = 7^{15} \times (\sqrt{3})^{15}$	$(\sqrt{13})^3 = \sqrt{13 \times 13 \times 13}$

	$-7^2 = (-7)^2$
	$-7^3 = (-7)^3$
	$\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$
	$\sqrt{3^{-4}} = (\sqrt{3})^4$