

7. $\frac{(-\frac{1}{3})^4 \cdot (-3)^3}{-3^2}$ işlemini aşağıdakilerden hangisi ile çarpılırsa sonucu pozitif bir tam sayı olur?

A. 3^3 +

B. 3^{-4} +

C. -3^{-3} -

D. -3^4 -

Handwritten solution for Question 7:

$$\frac{(-\frac{1}{3})^4 \cdot (-3)^3}{-3^2} = \frac{+\frac{1}{81} \cdot -27}{-9} = \frac{-\frac{1}{3}}{-9} = \frac{1}{27}$$

Options analysis:

- A) $3^3 \cdot \frac{1}{27} = 1$ +
- B) $\frac{1}{3^3} \cdot 3^{-4} = \frac{1}{3^7} = 3^{-7}$ +
- C) $\frac{1}{3^3} \cdot -3^{-3} = -\frac{1}{3^6} = -3^{-6}$ -
- D) $-3^4 \cdot \frac{1}{3^3} = -3$ -

8. $\frac{(0,01) \cdot 5^5 \cdot (0,1)^2}{(0,5)^4}$ işleminin sonucu kaçtır? www.ogretmenler.com

A. 1

B. 5

C. 10

D. 15

Handwritten solution for Question 8:

$$\frac{\frac{1}{100} \cdot 5^5 \cdot (\frac{1}{10})^2}{(\frac{5}{10})^4} = \frac{\frac{1}{10^2} \cdot 5^5 \cdot \frac{1}{10^2}}{\frac{5^4}{10^4}} = \frac{\frac{5^5}{10^4}}{\frac{5^4}{10^4}} = \frac{5^5}{5^4} = 5$$

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9. $\frac{(0,006)^{-3} \cdot (0,02)^3}{(0,09)^{-3}}$ işleminin sonucu kaçtır?

A. $3^{-3} \cdot 10^{-3}$

B. $3^3 \cdot 10^3$

C. $3^3 \cdot 10^{-3}$

D. $3^{-3} \cdot 10$

$6^3 = 2^3 \cdot 3^3$

$9^3 = (3^2)^3 = 3^6$

Handwritten solution for Question 9:

$$\frac{(\frac{6}{10^3})^{-3} \cdot (\frac{2}{10^2})^3}{(\frac{9}{10^2})^{-3}} = \frac{(\frac{10^3}{6})^3 \cdot (\frac{2}{10^2})^3}{(\frac{10^2}{9})^3} = \frac{\frac{10^9}{2^3 \cdot 3^3} \cdot \frac{2^3}{10^6}}{\frac{10^6}{9^3}} = \frac{\frac{10^3}{3^3 \cdot 10^6}}{\frac{10^6}{3^6}} = \frac{10^3}{3^3} \cdot \frac{3^6}{10^6} = \frac{3^3}{10^3}$$

II. yol: $\frac{(6 \cdot 10^{-3})^{-3} \cdot (2 \cdot 10^{-2})^3}{(9 \cdot 10^{-2})^{-3}} = \frac{6^{-3} \cdot 10^9 \cdot 2^3 \cdot 10^{-6}}{9^{-3} \cdot 10^6} = \frac{2^{-3} \cdot 3^{-3} \cdot 2^3 \cdot 10^3}{3^{-6} \cdot 10^6} = \frac{3^3}{10^3} = 3^3 \cdot 10^{-3}$

Additional notes:

- $2^{-3+3} = 2^0 = 1$
- $\frac{3^3}{3^{-6}} = 3^9$
- $9^{-3} = 3^{-6}$
- $6^{-3} = 2^{-3} \cdot 3^{-3}$