

10. $\frac{(-3)^{-4} \cdot (-3)^3 \cdot (-3)^{-5}}{(-3^{-4}) \cdot (-3^{-3})}$ işleminin sonucu kaçtır?

A. -9

B. -3

C. 3

☒ D. 9

$$\begin{aligned} (-3)^{-4} &= \frac{1}{(-3)^4} = \frac{1}{3^4} + \\ (-3)^{-5} &= \frac{1}{(-3)^5} = -\frac{1}{3^5} - \\ -3^{-4} &= -\frac{1}{3^4} - \\ -3^{-3} &= -\frac{1}{3^3} - \end{aligned}$$

$$\frac{\frac{1}{3^4} \cdot -3^3 \cdot -\frac{1}{3^5}}{-\frac{1}{3^4} \cdot -\frac{1}{3^3}} = \frac{\frac{3^3}{3^8}}{\frac{1}{3^7}} = \frac{3^3}{3^8} \cdot \frac{3^7}{1} = \frac{3^3}{3^1} = 3^2 = 9$$

+ . . . = +
- . . = +

11. $\frac{(-1)^{-1} \cdot 1^{-1} \cdot (-2^{-2})}{2^{-2} \cdot (-2)^{-2} \cdot 1^{-4}}$ işleminin sonucu kaçtır?

A. $-\frac{1}{4}$

B. $\frac{1}{4}$

C. -4

☒ D. 4

$$\begin{aligned} (-1)^{-1} &= \frac{1}{(-1)^1} = \frac{1}{-1} = -1 \\ 1^{-1} &= \frac{1}{1^1} = 1, \quad 1^{-4} = \frac{1}{1^4} = 1 \\ (-2^{-2}) &= -\frac{1}{2^2} = -\frac{1}{4} \\ 2^{-2} &= \frac{1}{2^2} = \frac{1}{4}, \quad (-2)^{-2} = \frac{1}{(-2)^2} = \frac{1}{4} \end{aligned}$$

$$\frac{(-1) \cdot 1 \cdot -\frac{1}{4}}{\frac{1}{4} \cdot \frac{1}{4} \cdot 1} = \frac{\frac{1}{4}}{\frac{1}{16}} = 4$$

- . . = +

12. $5 \cdot \left(\frac{5}{2}\right)^{-1} + 27 \cdot \left(-\frac{2}{3}\right)^3$ işleminin sonucu kaçtır?

A. 25

B. $\frac{25}{3}$

C. 6

☒ D. -6

$$\begin{aligned} 5 \cdot \left(\frac{2}{5}\right)^{-1} + 27 \cdot \left(-\frac{2}{3}\right)^3 \\ 2 + 27 \cdot -\frac{8}{27} = 2 + (-8) \\ = -6 \end{aligned}$$

$$\begin{aligned} \left(\frac{a}{b}\right)^{-1} &= \frac{b}{a} \\ \left(\frac{5}{2}\right)^{-1} &= \frac{2}{5} \end{aligned}$$