

به نام خدا

پاسخنامه ی نمونه سوال

امتحالی پایه هفتم

مجموعه سوالات استاد عشی

-1

$$[30, 40] = 3 \times 5 \times 2 \times 2 \times 2 = 120$$

$$(27, 18) = 3 \times 3 = 9$$

-2

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

-3

$$((3+3) \times 3/14) \times 4 = \boxed{75/36}$$

-4

مساحت یک وجه $25 = 6 \div 150$

$$\sqrt{25} = 5 \text{ طول هر ضلع}$$

$$\text{حجم} = 5 \times 5 \times 5 = \boxed{125}$$

-5

$$3^2 \times 2 \times a \sqcap 3 \times 5 \times a \xrightarrow{\text{م.م.ب}} 3 \times a = 33 \longrightarrow a = 11$$

$$3 \times 2^2 \times 11 \sqcup 32 \longrightarrow 32 \times 3 \times 11 = \boxed{1056}$$

-6

$$\text{حجم استوانه} = (r \times r \times \pi) \times 3 = 12\pi \longrightarrow r \times r = 4 \longrightarrow r = 2$$
$$\text{مساحت کل} = (\text{مساحت قاعده} = 4\pi) \times 2 + (\text{مساحت جانبی} = 4\pi \times 3 = 12\pi)$$

$$12\pi + 8\pi = \boxed{20\pi}$$

-7

$$3^7 \times 3^2 \times 2^9 = 3^9 \times 2^9 = 6^9$$

$$5^4 \times 2^7 \times 5^3 = 5^7 \times 2^7 = 10^7$$

$$4^3 + 4^3 + 4^3 + 4^3 = 4 \times 4^3 = 4^4$$

$$\left(\frac{1}{2}\right)^3 \times \left(\frac{0}{5}\right) \times \left(\frac{5}{10}\right)^7 = \left(\frac{1}{2}\right)^{11} \text{ یا } \left(\frac{5}{10}\right)^{11}$$

-8

$$3 \text{ مکعب} + 2 \text{ مجذور} = 3^3 + 2^2 = 27 + 4 = 31$$

$$\frac{0}{5^3} + \left(\frac{1}{2}\right)^3 = \frac{1}{2} + \frac{1}{8} = \frac{4}{8} + \frac{1}{8} = \frac{5}{8}$$

$$\sqrt{\frac{11}{15} \times \frac{27}{55}} = \sqrt{\frac{9}{25}} = \boxed{\frac{3}{5}}$$

$$\sqrt{\frac{49 \times (3^2 + 4^2)}{0/0016}} = \sqrt{\frac{49 \times (9 + 16)}{0/0016}} = \frac{7 \times 5}{0/0016} = \frac{7 \times 5}{\frac{1}{4}} = \frac{7 \times 5 \times 100}{4} =$$

875

$$3^{x+1} = 9^{x-1} \longrightarrow 3^{x+1} = (3^2)^{x-1} \longrightarrow 3^{x+1} = 3^{2x-2}$$

$$\longrightarrow x + 1 = 2x - 2 \longrightarrow -x = -3 \longrightarrow \boxed{x = 3}$$

$$7^{3x+1} = 7^3 \times 7 \times 7^6 \longrightarrow 7^{3x+1} = 7^{10} \longrightarrow 3x + 1 = 10$$

$$\longrightarrow 3x = 9 \longrightarrow \boxed{x = 3}$$