

# گروه ریاضی



عنوان :

نام دبیر :

تاریخ : /  
98 /

سازمان ملی پرورش  
استعدادهای درخشان  
دبیرستان دوره اول  
فرزانگان 2 منطقه 1  
کارتک شماره :

کلاس :

پایه :

نام و نام خانوادگی :

(1)

$$\text{الف) } 2^6 \times 3^5 \times 7^4 = 64 \times 243 \times 2401 = 37340352$$

$$\text{ب) } 5 \times 3^4 = 5 \times 81 = 401$$

$$\text{ج) } -3^4 = -81$$

$$\text{د) } 8 - 3^4 - (4 \times 5)^2 = 8 - 81 - 20^2 = 8 - 81 - 400 = -473$$

$$\text{ه) } 3 \times 10^{12} = 3 \times 1000000000000 = 3000000000000$$

$$\text{و) } 0^7 \times 7^0 - 4^0 = 0 \times 1 - 1 = 0 - 1 = -1$$

$$\text{ز) } -4^5 \times (-5)^4 = -1024 \times 625 = -640000$$

$$\text{ح) } 11 - 10^3 \times 3^4 + (2^5 + 3)^2 = 11 - 81000 + 35 \times 35 = 11 - 81000 + 1225 = -79764$$

.2

$$\text{الف) } 5^3 + 5^3 + 5^3 = 3 \times 5^3 = 3 \times 125 = 375$$

$$\text{ب) } 7^2 + 7^2 = 49 + 49 = 98$$

$$\text{ج) } 3 \times (13 + 7) \div (10 - 4^2) = 3 \times 20 \div (10 - 4^2) = 3 \times 20 \div (10 - 16) = 3 \times 20 \div (-6) = 60 \div (-6) = -10$$

$$\text{د) } (-5 \times 4)^2 \div 4^2 \times (-3)^2 = (-20)^2 \div 4^2 \times (-3)^2 = 400 \div 16 \times 9 = 25 \times 9 = 225$$

$$\text{ه) } 5^2 - (3^2 - 1^3) \times 2^4 \div 4^2 = 5^2 - (9 - 1) \times 2^4 \div 4^2 = 5^2 - 8 \times 2^4 \div 4^2 = 25 - 8 \times 16 \div 16 = 25 - 8 = 17$$

$$\text{و) } (7^2 - 5^2)(6 \times 3^2 + 4) \times 20 = (49 - 25)(6 \times 9 + 4) \times 20 = 24 \times 58 \times 20 = 27840$$

$$\text{ز) } (5^3 \div 25) \times (2^3 + 2^3) \div 2^2 = (125 \div 25) \times (2^3 + 2^3) \div 2^2 = 5 \times (2^3 + 2^3) \div 2^2 = 5 \times (8 + 8) \div 4 = 20$$

$$\text{ح) } 5^2 - (3^2 - 1^3) \times 2^2 \div 4^2 = 5^2 - (9 - 1) \times 2^2 \div 4^2 = 5^2 - 8 \times 2^2 \div 4^2 = 25 - 8 \times 4 \div 16 = 23$$

$$\text{ط) } (-7 \times 2^4) \div 2^4 \times (-4)^2 = (-7 \times 16) \div 2^4 \times (-4)^2 = (-112) \div 2^4 \times (-4)^2 = (-112) \div 16 \times 16 = -112$$

$$\text{ز) } (3^5 - 5^3)(2^3 - 3^2) \div 2^2 = (243 - 125)(2^3 - 3^2) \div 2^2 = 118 \times (8 - 9) \div 4 = 118 \times (-1) \div 4 = -\frac{59}{2}$$

.3

$$3^5 = 243 \quad , \quad 5^3 = 125 \quad , \quad > \text{ (الف)}$$

$$2 \times 10 = 20 \quad , \quad 2^{10} = 1024 \quad , \quad < \text{ (ب)}$$

$$4^2 + 4^3 = 16 + 64 = 80 \quad , \quad 4^5 = 1024 \quad , \quad < \text{ (ج)}$$

$$\left(\frac{1}{3}\right)^3 = \frac{1}{27} \quad , \quad \frac{1^3}{3} = \frac{1}{3} \quad , \quad < \text{ (د)}$$

$$2^{10} + 2^{10} = 1024 + 1024 = 2048 \quad , \quad 2^{11} = 2048 \quad , \quad = \text{ (ه)}$$

$$(-1)^{20} = 1 \quad , \quad -1^{100} = -1 \quad , \quad > \text{ (و)}$$

$$0^{100} = 0 \quad , \quad 100^0 = 1 \quad , \quad < \text{ (ز)}$$

$$-3^4 = -81 \quad , \quad (-3)^4 = (-3) \times (-3) \times (-3) \times (-3) = 9 \times 9 = 81 \quad , \quad < \text{ (ح)}$$

$$-3^5 = -243 \quad , \quad (-3)^5 = (-3) \times (-3) \times (-3) \times (-3) \times (-3) = 9 \times 9 \times (-3) = -243 \quad , \quad = \text{ (ط)}$$

$$1 \div 2 \times 2 \times 2 = 0.5 \times 2 \times 2 = 2 \quad , \quad 1 \div 2^3 = 1 \div 8 = 0.125 \quad , \quad > \text{ (ي)}$$