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Scoala: Liceul German "Friedrich Schiller", Oradea

Judet: Bihor

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CLASA a V-a

Partea 1.:

$$1. a = (5^2 - 2^5) : 3 - 1^{2019}$$

$$a = (5^2 - 2^4) : 3 - 1$$

$$a = (25 - 16) : 3 - 1$$

$$a = 9 : 3 - 1$$

$$a = 3 - 1$$

$$\boxed{a = 2}$$

$$b = (2^4)^4 : 2^2 \cdot (3^2 - 1) - 2019^0 \cdot 2^2$$

$$b = 2^{16} : 2^2 \cdot (9 - 1) - 1 \cdot 2^2$$

$$b = 2^{14} \cdot 8 - 1 \cdot 4$$

$$b = 2^{14} \cdot 2^3 - 2^2$$

$$b = 2^{17} - 4$$

$$b = 131072 - 4$$

$$\boxed{b = 131068}$$

$$2. a) 4^{47} \text{ si } 8^{31}$$

$$4^{47} = (2^2)^{47} = 2^{94}$$

$$8^{31} = (2^3)^{31} = 2^{93}$$

$$(4^{47}) > (8^{31})$$

$$b) 9^{15} = (3^2)^{15} = 3^{30}$$

$$16^7 = (2^4)^7 = 2^{28}$$

$$3^{30} > 2^{28}$$

$$(9^{15}) > (16^7)$$

$$3.a) 29 + 28 + 27 + \dots + 6 + 5 = 4 + 3 + 2 + a$$

$$(5 + 29) \cdot 25 : 2 = 7 + 2a$$

$$34 \cdot 25 : 2 = 7 + 2a$$

$$850 : 2 = 7 + 2a$$

$$425 = 7 + 2a$$

$$425 - 7 = 2a$$

$$418 = 2a \Rightarrow a = 418 : 2 = 209$$

$$\begin{array}{r} 4 \\ = 18 \\ 18 \\ = \end{array}$$

$$b) 144 : (n - 150) = 6$$

$$n - 150 = 144 : 6$$

$$n - 150 = 24$$

$$n = 24 + 150$$

$$\boxed{n = 174}$$

PARTEA a11-a :

$$1. 3x + 77 = (x + 133) \cdot 2$$

$$3x + 77 = 2x + 266$$

$$x = 266 - 77 = \boxed{189}$$

Verificare:

$$3 \cdot 189 + 77 = (189 + 133) \cdot 2$$

$$644 = 644$$

$$2. (38+x) + (36+x) = (14+x) + (12+x) + (10+x) + (8+x)$$

$$74 + 2 \cdot x = 44 + 4 \cdot x$$

$$74 - 44 = 4 \cdot x - 2 \cdot x$$

$$30 = 2 \cdot x$$

$$x = 30 : 2$$

$$\boxed{x=15} \text{ (peste 15 ani)}$$

PARTEA a III-a

$$1. 122, 263, 3124, 4205, \underbrace{5306}_{\substack{5 \cdot 6 \\ 30}}, \underbrace{6427}_{\substack{6 \cdot 7 \\ 42}}$$

$$2. 1 \rightarrow 100 \text{ euro}$$

$$2 \rightarrow 110 \text{ euro}$$

$$3 \rightarrow 120 \text{ euro}$$

.....

$$31 \rightarrow 400 \text{ euro}$$

$$(100+400) \cdot 31 : 2$$

$$= 500 \cdot 31 : 2$$

$$= 250 \cdot 31$$

$$\boxed{= 7750}$$