

COMPITI PER LE VACANZE ESTIVE 2019-2020

Istituto Sant'Ambrogio – Classe prima, settore grafico

I compiti sono da svolgersi in maniera ordinata su fogli a protocollo a quadretti, su cui va scritto il nome, e da consegnarsi all'insegnante il primo giorno di lezione dopo le vacanze estive.

Prima di svolgere gli esercizi relativi ad un determinato argomento, ripassare la teoria relativa.

ESPRESSIONI NUMERICHE

somma algebrica		
1)	$+12 + (-5 - 15 + 4) - 3$	-7
2)	$8 + (-1 + 19 - 6) + 4$	+24
3)	$-13 + (-7 + 6) + (-22 + 13)$	-23
4)	$-8 + (37 - 48) + (42 - 18)$	+5
5)	$16 - (+7 - 2 + 5 - 9)$	+15
6)	$-5 - (13 - 7 + 2 - 9)$	-4
7)	$+18 - (-11 - 5 + 8 - 4 + 3)$	+27
8)	$13 - (6 - 8 - 14 + 18 + 3)$	+8
9)	$-20 + (5 - 10) + (4 + 3 - 18) + (2 - 6)$	-40
10)	$8 + (-2 + 20 - 8) - (4 - 26 + 11) + (-21 + 17)$	+25
11)	$[-8 \cdot 7 - (-3) \cdot (-4) - 2 \cdot (+5)]: [-2 \cdot 3 + 5] - [-3(-3 \cdot 4 + 5 \cdot 2) - 2(-5)]$	+62
12)	$[(-2)^2 + (-7 - 3):(+5) + (-6 - 2)^2:(-3 - 1)] \cdot [(-1) \cdot (-7 + 6) - 4]$	+42
13)	$\{-90: [(-6) \cdot (+7) - 3] + 50: [-5 + (+5) \cdot (-4)]\} \cdot (-10)$	0
14)	$\{[2 \cdot (-6) - 3 \cdot (-7) - 4(-9)](+3) + (-8 + 3 + 5):(-9)\}:(-5)$	-27
15)	$[10 - (-8 + 6)^2 \cdot (-6 + 3)] + [(-2)^3 + (+2)^2]:(-2)^2$	+21
16)	$[(-7)^{10} \cdot (-7)^6]: [(-7)^3]^5 - (4^6 \cdot 2^6):8^5 + (-50)^5:(-25)^5$	+17
17)	$\{[-(-2)^3 - (-2)^2 - 2] \cdot 2^{10}\}: [2^7 \cdot 2^2] - [(-5)^{14}:(-5)^{12}]$	-21
18)	$[(3 + 2 - 8)^2:(1 - 3)^0]^2 - \{1 - [2 - (1 - 3 + 2)^2:(-2)^3]^2\}^2$	+72
19)	$-12:3 + 4 + \{5 - (-2)^3 - [4 - (1 + 2 \cdot 4 - 6):(-3) + 5] - 6 + 2\}$	-1
20)	$\{[(2 + 5 - 4)^2:(15 - 12)^2 \cdot (5^2 - 4 \cdot 3)^2]: (11 + 8 - 2 \cdot 3)^2 - 1\}^3$	0

MINIMO COMUNE MULTIPLIO

calcola il mcm tra i seguenti gruppi di numeri naturali						
1	30 ; 40	mcm: 120		2	30 ; 50	mcm: 150
3	32 ; 4	mcm: 32		4	18 ; 33	mcm : 198
5	36 ; 45	mcm: 180		6	16 ; 40	mcm : 80
7	12 ; 30	mcm: 60		8	26 ; 13	mcm: 26
9	44 ; 55	mcm: 220		10	72 ; 150	mcm: 1800
11	144 ; 216	mcm: 432		12	120 ; 168	mcm: 840
13	312 ; 416	mcm: 1248		14	258 ; 306	mcm: 13158
15	120 ; 144	mcm: 720		16	147 ; 252	mcm: 1764
17	210 ; 280	mcm: 840		18	116 ; 232	mcm: 232
19	9 ; 15 ; 12	mcm: 180		20	30 ; 20 ; 50	mcm: 300

OPERAZIONI CON LE FRAZIONI

somme e differenze					
$\frac{1}{2} + \frac{5}{2}$	3	$\frac{1}{3} + \frac{5}{3}$	2	$\frac{1}{4} + \frac{3}{4}$	1
$\frac{1}{5} + \frac{9}{5}$	2	$\frac{22}{7} - \frac{1}{7}$	3	$\frac{1}{6} + \frac{17}{6}$	3
$7 - \frac{7}{6}$	$\frac{35}{6}$	$8 - \frac{3}{2}$	$\frac{13}{2}$	$\frac{25}{6} - 4$	$\frac{1}{6}$
$\frac{17}{2} - 6;$	$\frac{5}{2}$	$5 + \frac{2}{3};$	$\frac{17}{3}$	$4 - \frac{11}{3}$	$\frac{1}{3}$
$\frac{6}{7} + \frac{12}{7} + \frac{10}{7}$	4	$\frac{11}{13} + \frac{20}{13} + \frac{8}{13}$	3	$\frac{18}{5} + \frac{8}{5} + \frac{4}{5}$	6
$\frac{3}{2} + \frac{5}{2} - \frac{1}{2}$	$\frac{7}{2}$	$\frac{3}{2} + \frac{2}{5} - \frac{1}{10}$	$\frac{9}{5}$	$\frac{10}{9} - \frac{1}{2} + \frac{1}{18}$	$\frac{2}{3}$
$\frac{11}{6} - \frac{7}{30} - \frac{1}{5}$	$\frac{7}{5}$	$\frac{3}{4} + \frac{7}{6} - \frac{11}{12}$	1	$\frac{3}{5} + \frac{3}{10} - \frac{7}{30}$	$\frac{2}{3}$
$(\frac{5}{3} + \frac{15}{4}) \times 3 + (\frac{21}{4} - \frac{3}{2}) \times 3$					$\frac{55}{2}$
$(\frac{5}{18} - \frac{1}{5}) \times \frac{45}{2} - (\frac{5}{8} + \frac{7}{6}) \times \frac{27}{43}$					$\frac{5}{8}$
$(\frac{8}{25} - \frac{1}{10}) \times \frac{50}{11} + (\frac{3}{4} \times \frac{2}{3} + \frac{1}{2}) \times \frac{5}{6}$					$\frac{11}{6}$
$(\frac{24}{7} - 1 - \frac{5}{14}) \times (5 - \frac{11}{5}) - \frac{3}{11} \times (5 + \frac{1}{2}) - (4 - \frac{7}{2})$					$\frac{19}{5}$

ESPRESIONI CON LE FRAZIONI

1)	$\left(\frac{6}{7} - \frac{1}{4}\right) : \left(\frac{15}{28} + \frac{10}{21}\right)$	$\frac{3}{5}$
2)	$\left(\frac{7}{8} - \frac{7}{32}\right) : \left(\frac{11}{12} - \frac{3}{16}\right)$	$\frac{9}{10}$
3)	$\left(\frac{5}{13} + \frac{1}{3}\right) : \left(\frac{1}{2} + \frac{17}{78}\right)$	1
4)	$\left[\left(5 - \frac{1}{4}\right) : \frac{19}{2} + \frac{1}{2}\right] - \left[\left(\frac{3}{2} - \frac{1}{4}\right) : \frac{7}{2} - \frac{1}{3}\right]$	$\frac{41}{42}$
5)	$\frac{3}{2} + \left(\frac{5}{4} + \frac{3}{2}\right) : \frac{11}{3} - \left[\left(\frac{1}{2} + \frac{1}{3}\right) : \frac{5}{2} + \frac{1}{3}\right] : 2$	$\frac{23}{12}$
6)	$\left\{\left[\left(\frac{1}{2} - \frac{1}{30}\right) : \frac{7}{15} + \left(\frac{2}{5} - \frac{1}{10}\right) \left(\frac{5}{6} + \frac{1}{3}\right)\right] \cdot \frac{5}{3} + \frac{1}{5}\right\} : \frac{7}{4}$	$\frac{31}{21}$
7)	$\left[\left(\frac{1}{4} + 1 - \frac{2}{3}\right)^2 : \frac{7}{6} + \frac{6}{5} \cdot \left(\frac{1}{2} - \frac{1}{3}\right)^2\right] : \left(\frac{3}{4}\right)^2 - \left(\frac{2}{3}\right)^2$	$\frac{2}{15}$
8)	$\left\{\left[\frac{17}{12} : \left(\frac{5}{4} - \frac{2}{3}\right)\right] : \left(\frac{13}{12} + \frac{1}{3}\right)\right\}^2 \left[\left(\frac{13}{12}\right)^3 \cdot \left(\frac{13}{12}\right)\right]^0 : \left(\frac{10}{7}\right)^2$	$\frac{36}{25}$
9)	$\left[\left(\frac{3}{5}\right)^2 \cdot 5 + \left(\frac{1}{2}\right)^4 : \left(\frac{1}{2}\right)^4 + 2 - \left(\frac{2}{3}\right)^2 \cdot \left(\frac{9}{4}\right)^2 - 11 : \frac{22}{5}\right]^2 + \left(\frac{1}{12} \cdot \frac{9}{5}\right)^2$	$\frac{1}{40}$
10)	$\left\{\left[\left(\frac{12}{35}\right)^3 : \left(\frac{18}{7}\right)^3\right]^4 \cdot \left(3 - \frac{1}{2}\right)^{12}\right\} : \left(2 - \frac{5}{3}\right)^{10} + \left[\left(\frac{1}{9}\right)^5 : \left(\frac{1}{3}\right)^5\right] : \left(\frac{1}{3}\right)^5$	$\frac{10}{9}$

EQUAZIONI INTERE

risolvi le seguenti equazioni			
$2x - 3 = -5$	$x = -1$	$8x - 9x = 6x + 12 - 12x$	$x = \frac{12}{5}$
$2(x - 4) = 3(x - 5)$	$x = 7$	$2(5 + x) = 5x + 1$	$x = 3$
$6x - 26 = 16x - 56$	$x = 3$	$8 - 3[2x - 3(x - 2) + 5] - 2(4x - 5) = 0$	$x = -3$
$3(7x - 5) = 15x - 1$	$x = \frac{7}{3}$	$5x - (x - 2)^2 - 3(2x + 5) = 4 - (x - 1)(x + 1) - 3$	$x = 7$
$4(3x - 1) = 4x - 2$	$x = \frac{1}{4}$	$3(3 - 2x) = 24 + 4(2x - 1)$	$x = -\frac{11}{4}$
$3(3x - 1) + x = 1 - 5x$	$x = \frac{4}{15}$	$2(x + 1) - 3x = x - 3(x - 1)$	$x = 1$
$40 + x = 3(15 + x)$	$x = -\frac{5}{2}$		
$3x - 15 = 2x - 20$	$x = -5$		

EQUAZIONI FRAZIONARIE

1)	$\frac{x+1}{3} = 2x - 3$	$x = 2$
2)	$-\frac{x-2}{4} + \frac{x-2}{3} + \frac{1}{3}(x-2) = \frac{x-1}{2} - \frac{1}{4}$	$x = -1$
3)	$\frac{1}{5}x - 9 = 2x$	$x = -5$
4)	$\frac{1}{4}(2x - 1) = \frac{35}{4} - x$	$x = 6$
5)	$7x - \frac{2}{5} + x - 3 = x - 3 + 7x - \frac{2}{5}$	<i>indeterminata</i>
6)	$2 - \frac{1}{2}x + 3(x - 2) = \frac{1}{4} + 3x - 1$	$x = -\frac{13}{2}$
7)	$\frac{2x}{5} - 3 \left[\frac{2x-3}{2} - \left(2 - \frac{2x+1}{3} \right) \right] - \frac{13}{5} = 0$	$x = \frac{3}{2}$
8)	$\frac{2x-1}{2} : \frac{3}{4} - \left(2x - \frac{1}{3} \right) : \frac{4}{5} = \frac{1}{12} - \frac{5}{4}x$	$x = 4$
9)	$\frac{x-2}{6} = \frac{x-2}{2} - \frac{x-2}{3}$	<i>indeterminata</i>
10)	$\frac{5}{2} - \frac{3}{4} \left(\frac{1}{3} - \frac{x}{2} \right) - \left(\frac{2x-5}{6} - 1 \right) = 1$	$x = -74$
11)	$\frac{4x+1}{6} + \frac{1}{3} = \frac{2x-1}{3}$	<i>impossibile</i>
12)	$\frac{2x+1}{6} + \frac{2x-4}{5} - 6 = \frac{20-x}{4} + \frac{1}{6}$	$x = 12$
13)	$\frac{x+2}{3} + \frac{5-2x}{5} + 1 = \frac{2x-5}{15} + \frac{2x+7}{3} - x$	$x = -5$
14)	$\frac{1}{3} \left(\frac{2}{5} - \frac{1}{3}x \right) = \frac{x}{6} - \frac{2x-1}{6}$	$x = \frac{3}{5}$
15)	$\frac{x}{3} - \left\{ -\frac{x}{2} - \left[\frac{x-1}{3} - \left(\frac{x+1}{2} - \frac{2x}{3} \right) \right] \right\} = 0$	$x = \frac{5}{8}$

16)	$\frac{2}{15} - \left[\frac{3}{4} - \frac{2x-35}{10} - \left(\frac{3}{5} + \frac{2x+5}{4} + \frac{1}{6} \right) \right] = 0$	$x = 3$
17)	$\frac{2x-3}{2} - \frac{1}{2} - 2 = 3x - 5 - (2-x) - 3x$	<i>impossibile</i>
18)	$\frac{2}{3} \left[\frac{1}{2}(2x-1) + \frac{1}{4}(2x+1) \right] = \frac{1}{3} \left[\frac{1}{2}(x+1) - \frac{1}{2}x \right] + \frac{1}{6}$	$x = \frac{1}{2}$
19)	$2x - \frac{1}{3} + \left(1 - \frac{1}{3} \right) \left(x - \frac{1}{5} \right) = (x+1) \left(2 - \frac{1}{5} \right) + 3x - \frac{2}{15}$	$x = -1$
20)	$\left(\frac{2x+1}{2} - \frac{2x-1}{3} \right) \left(\frac{1}{2} - \frac{1}{3} \right) = \frac{5}{6} \left(\frac{2x+1}{2} + \frac{2x-1}{3} \right) - \frac{4}{3}x$	<i>indeterminata</i>
21)	$\frac{2x-25}{5} + \frac{(9-x)^2}{3} + x^2 - 20 = 2 + \frac{4x(x-1)}{3}$	$x = 0$
22)	$\frac{(x-3)^2}{2} + 2(x-3)(x+3) + 5x = x(x-3) + \frac{x(3x+1)}{2}$	$x = 3$
23)	$\frac{7(7-x)}{6} = \frac{3(17-2x)}{9} + \frac{4x-9}{7} - \frac{13-x}{2} + 4$	$x = 4$
24)	$\frac{3x-1}{2} + \frac{13x-16}{9} = \frac{4x-1}{3} - \frac{6-5x}{4}$	<i>indeterminata</i>
25)	$4 \left\{ x - 3 \left[1 - x + \frac{2x-5}{6} - 2 \left(2x + \frac{1}{2} \right) \right] \right\} - 10 = 60x$	<i>indeterminata</i>

Spero di vedervi tutti a settembre... cercate di fare i bravi 😊

Buone vacanze