

Guia 1

3.1 Conociendo las formulas anteriores realizar las siguientes operaciones

1. $\frac{8}{3} + \frac{2}{3} = \frac{10}{3}$

2. $\frac{11}{3} + \frac{5}{3} = \frac{16}{3}$

3. $\frac{5}{9} + \frac{13}{2} = \frac{10 + 117}{18} = \frac{127}{18}$

4. $\frac{9}{9} + \frac{18}{2} + \frac{5}{4} + \frac{13}{3} = \frac{127}{18} + \left(\frac{15 + 52}{12} \right)$
 $= \frac{127}{18} + \frac{67}{12} = \frac{1524 + 1206}{216}$
 $= \frac{2730}{216} = \frac{1365}{108} = \frac{455}{36}$

5. $\frac{4}{9} + \frac{11}{3} + \frac{7}{4} + \frac{15}{3} = \frac{12 + 99}{27} = \frac{111}{27} + \left(\frac{7}{4} + \frac{15}{3} \right)$
 $= \frac{41 + 60}{12} = \frac{81}{12} + \frac{111}{27} = \frac{2787 + 1332}{324} = \frac{3519}{324} = \frac{1173}{108}$
 $= \frac{391}{36}$

6. $\frac{9}{64} - \frac{5}{64} = \frac{4}{64}$

7. $\frac{7}{6} - \frac{45}{5} = \frac{35 - 270}{30} = \frac{-235}{30} = \frac{-47}{6}$

8. $\frac{4}{8} \times \frac{8}{9} = \frac{32}{72} = \frac{16}{36} = \frac{8}{18} = \frac{4}{9}$

9. $\frac{2}{6} \div \frac{3}{8} = \frac{16}{18} = \frac{8}{9}$

$$10. \frac{5^3}{3} + \frac{2^4}{11} = \frac{125}{3} + \frac{16}{11} = \frac{1375 + 48}{33} = \frac{1423}{33}$$

$$11. \frac{\sqrt{16}}{8} - \frac{5}{7} = \frac{4}{8} - \frac{5}{7} = \frac{28 - 40}{56} = \frac{-12}{56} = \frac{-6}{28} = \frac{-3}{14}$$

$$12. \frac{1}{3^3} \times \frac{\sqrt[3]{81}}{8} = \frac{1}{27} \times \frac{9}{8} = \frac{9}{216} = \frac{1}{24}$$

$$13. \frac{8}{3} + \frac{6}{13} \times \frac{7}{33} = \frac{8}{3} + \frac{42}{39} = \frac{316 + 126}{117} = \frac{442}{117} = \frac{146}{39}$$

$$14. \frac{9}{8} + \frac{5}{\sqrt{36}} \div \frac{4}{9} = \frac{9}{8} + \frac{45}{24} = \frac{216 + 360}{192} = \frac{576}{192} = \frac{192}{64} = \frac{96}{32} = \frac{48}{16} = \frac{24}{8} = \frac{6}{2}$$

$$15. \frac{4}{15} - \left(\frac{7}{3} \times 2 \frac{5}{3} \right) + \frac{1}{3} = \frac{4}{15} - \left(\frac{7}{3} \times \frac{11}{3} \right) + \frac{1}{3} = \frac{4}{15} - \frac{77}{9} + \frac{1}{3} = \frac{4}{15} - \frac{770}{135} + \frac{50}{135} = \frac{-706}{135} + \frac{1}{3} = \frac{-3047 + 135}{405} = \frac{-2912}{405} = \frac{-358}{48}$$

$$16. \frac{2}{3} + \left(\frac{8}{16} \times \frac{\frac{2}{6}}{\frac{5}{9}} \right) = \frac{2}{3} + \left(\frac{8}{16} \times \frac{18}{30} \right) = \frac{2}{3} + \frac{144}{480} = \frac{2}{3} + \frac{144}{480} = \frac{160 + 144}{480} = \frac{304}{480} = \frac{176}{240} = \frac{88}{120} = \frac{22}{30}$$

$$17. \frac{8}{3} + \left(\frac{5}{2} \div \frac{3^3}{8} \right) - \left(\frac{\sqrt{36}}{6^2} \times \frac{4}{6} \right) = \frac{8}{3} + \left(\frac{5}{2} \div \frac{27}{8} \right) - \left(\frac{6}{36} \times \frac{4}{6} \right)$$

$$= \frac{8}{3} + \left(\frac{40}{54} \right) - \left(\frac{16}{27} \right) = \frac{432 + 120}{162} - \frac{16}{27}$$

$$= \frac{552}{162} - \frac{16}{27} = \frac{5976 - 2592}{1764} = \frac{3384}{1764}$$

$$= \frac{6192}{1944} = \frac{1032}{324} = \frac{172}{54} = \frac{86}{27}$$

a. $\frac{3}{9} + \frac{2}{9} = \frac{5}{9}$

b. $\frac{25}{7} + \frac{27}{7} = \frac{52}{7}$

c. $\frac{7}{9} + \frac{2}{9} + \frac{5}{9} + \frac{12}{9} = \frac{26}{9}$

d. $\frac{28}{9} - \frac{25}{9} - \frac{15}{9} - \frac{8}{9} = -\frac{20}{9}$

e. $\frac{35}{7} - \frac{15}{7} = \frac{20}{7}$

f. $\frac{150}{10} - \frac{100}{10} = \frac{50}{10}$

g. $\frac{16}{9} + \frac{8}{3} = \frac{48 + 72}{27} = \frac{120}{27}$

h. $\frac{1}{9} + \frac{5}{3} + \frac{6}{12} + \frac{15}{24} = \frac{209}{72}$

i. $100/12 \div 50/48 = \frac{5}{3}$

j. $25/35 + 15/7 + 12/70 + 13/14 = \frac{272}{70}$

k. $1/2 + 4/3 + 21/5 + 13/6 = \frac{41}{5}$

l. $1/20 + 4/30 + 24/5 + 35/6 = \frac{649}{60}$

Multiplication

$$a. 25135 \times 7517 = 751741$$

$$b. 413 \times 715 = 2815$$

$$c. 12170 \times 13174 = 391245$$

$$d. 6112 \times 15124 = 5116$$

$$2. 0.00025 + 0.00057 + 0.00099 + 0.00065 = 2.44$$

$$b. 1.2345 + 2.678 + 3.6905 + 0.76890 = 8.3719$$

$$c. (57.890 - 34.780) + (27.654 - 8.98765) = -34.703.44$$

$$d. 15.35 \times 12.76 = 195.366$$

$$e. 23.790 \times 24.860 = 591.47941$$

Division

$$a. 101(5) \div 312 = 4/3$$

$$b. 261(5) \div 1319 = 18/5$$

$$c. 501(4) \div 3719 = 125/74$$

$$d. 151(3) \div 4012 = 1/4$$

$$e. 100125 \div 60172 = 4/5$$

$$a. (-8)^3 = -512$$

$$b. (-9)^6 = 531441$$

$$c. (-5)^7 = -78125$$

$$d. (-15)^3 = -3375$$

$$e. (3)^6 = 729$$

$$f. (24)^2 = 576$$

$$g. (125)^3 = 1953125$$

$$h. (10)^0 = 1$$

$$i. 149^0 = 1$$

$$j. 200^0 = 1$$

$$k. 98^0 = 1$$

$$l. 67^1 = 67$$

$$m. 860^1 = 860$$

$$n. 89^1 = 89$$

$$o. 2890^1 = 2890$$

$$p. 27^3 \cdot 27^4 \cdot 27^5 \cdot 27^6 = 1.09171$$

$$q. 9^3 \cdot 9^5 \cdot 9^2 \cdot 9^5 = 2058$$

$$r. 24^3 \cdot 24^6 \cdot 24^7 \cdot 24^5 =$$

$$s. (5 \cdot 7 \cdot 9)^3 = 37735925$$

$$t. (4 \cdot 12 \cdot 9)^5 = 1.504$$

$$u. (2 \cdot 10 \cdot 6)^8 = 4.29981696$$

$$v. 7^8 \div 3^3 = 213511.1481$$

$$w. 25^4 \div 5^4 = 0.785625$$

$$x. \left(\frac{3}{4}\right)^3 = 0.421875$$

$$y. \left(\frac{12}{7}\right)^5 = 14.80525971$$

$$z. \left(\frac{1}{2}\right)^9 = 1.953125 \times 10^{-3}$$

$$q. q. \frac{3^8}{4^5} = 6.407226563$$