

$$1) \frac{(5^3 \cdot 5^{-2})^0 \cdot 5^7 \cdot (-5)^2}{4^2 \cdot 4^{-1} \cdot \frac{1}{4^3} \cdot (-4)^8} =$$

$$2) \frac{-8 \cdot 2^4 \cdot \frac{1}{16}}{\sqrt{64} \cdot \sqrt{16} \cdot 2^7} =$$

$$3) \sqrt{\frac{16}{4}} \cdot (-4)^4 \cdot 16 \cdot \frac{1}{4} \cdot \frac{1}{2^{-5}} =$$

$$4) \sqrt{\frac{1}{9}} \cdot (-3)^{14} \cdot 27 \cdot \frac{1}{3} \cdot \sqrt{81} =$$

$$5) \sqrt[3]{27} \cdot \sqrt[3]{64} =$$

$$6) \frac{(-5) \cdot (-5) \cdot 25}{(-125) \cdot 5^{-3} \cdot 5^2} =$$

$$7) \frac{(7^2)^3 \cdot 49 \cdot \frac{1}{7}}{(-7) \cdot (-7)} =$$

$$8) \frac{(-125)^0 \cdot (-3)^7 \cdot (-4)^7}{12} =$$

$$9) \frac{(5^3 \cdot 3^3)^2}{12} =$$

$$10) \frac{(7 \cdot 7^{-1})^{-2} \cdot 5^3 \cdot 5^{-1}}{(-5)^2} =$$

$$11) \frac{\left(\frac{1}{2}\right)^0 - \left(\frac{2}{3} + \frac{1}{6}\right)^2}{37^0 - \left(\frac{1}{2}\right)^{-1}} =$$

$$12) \left(\frac{3}{5}\right)^{-2} + \frac{2}{3} \cdot \frac{1}{7} - 1 =$$

$$13) \left(\frac{4}{5} - \frac{2}{3}\right) : \left(-\frac{1}{6} + \frac{9}{5}\right) =$$

$$14) \frac{5}{9} - 3 : \left(-\frac{1}{5}\right) + \frac{3}{2} \cdot 7 =$$

$$15) \left[\left(\frac{1}{2}\right)^{-2} - \frac{1}{4} \cdot \frac{1}{3} \right] : 12 =$$

$$16) \frac{\left(1 - \frac{1}{2}\right)^2 - 1}{\sqrt{\frac{4}{9}} - 1} - (-53)^0 = \frac{5}{4}$$

$$17) -\frac{2}{5} \left[4 + \frac{2}{3} \cdot \frac{7}{4} - \left(-\frac{1}{2}\right) : 3 \right] =$$

$$18) \left(\frac{2}{3}\right)^{-2} - \left(-\frac{1}{2}\right)^{-3} + \left[\left(-\frac{1}{2}\right)^{-3} \right]^{-1} =$$

$$19) \frac{2}{5} - \left[-2 \left(-1 + \frac{3}{2} \right) + \frac{2}{5} \right] =$$

$$20) \frac{\sqrt{\frac{1}{4}} - \sqrt{9}}{-\sqrt{\frac{9}{16}} - 1} - \left(\frac{1}{2}\right)^{-2} =$$

$$21) \left(\frac{1}{4} - \frac{1}{2}\right) : \left(1 + \sqrt{\frac{1}{16}}\right) - \left(\frac{1}{2}\right)^2 + \frac{1}{2} - 1 =$$

$$22) \left(\frac{1}{3} : \frac{5}{2}\right) - \left(\frac{2}{31} : \frac{1}{2}\right) - \sqrt{\frac{1}{4}} - 1 =$$

$$23) \frac{-\frac{2}{3} + \frac{1}{2}}{\sqrt{\frac{4}{9}} - (-1)} + 1 =$$

$$24) \left[\left(\frac{1}{2}\right)^2 \right]^2 \cdot \left[\left(\frac{1}{2}\right)^4 \right]^2 \cdot \left[\left(\frac{1}{2}\right)^{-1} \right]^{-3} =$$

$$25) \left(\frac{10}{2}\right)^2 + \frac{7}{4} =$$

$$26) (7 \cdot 7^{-1})^{-2} \cdot \left(\frac{125}{7} \cdot \frac{425}{3}\right)^0 \cdot (3^0)^{-1} \cdot 2^0 =$$

$$27) \frac{\sqrt{3} \cdot \sqrt{3}}{\sqrt{2} \cdot \sqrt{2}} + \frac{\sqrt{5} \cdot \sqrt{5}}{\sqrt{7} \cdot \sqrt{7}} =$$

$$28) \frac{\sqrt[3]{81}}{\sqrt[3]{3}} =$$

$$29) \sqrt{3} \cdot \sqrt{12} \cdot \sqrt{36} =$$

$$30) \sqrt{54-63} =$$

$$31) \sqrt{-54+63} =$$

$$32) \frac{(-6)^3 : (-6)^{-1}}{(-3) : (-3)^{-1}} \cdot (2^2 : 7^2) =$$

$$33) \frac{3 : 3^{-10}}{4^7 : 4^{10}} =$$

$$34) \frac{1}{2} - \left(\frac{2}{3} + \frac{5}{6} \right)^2 - \sqrt{\frac{1}{9}} =$$

$$35) \frac{3}{4} \cdot \left(-\frac{1}{4} + \frac{2}{8} \right) + \sqrt[3]{-8} + \frac{1}{3} : 3 =$$

$$36) -\frac{2}{15} + \left(-\frac{1}{5} \right)^2 - (-2)^0 + \left(-\frac{4}{5} \right) \cdot \frac{25}{2} =$$

$$37) -\left(\frac{-2}{6} \right) + \frac{1}{2} : \frac{5}{12} + \left(\frac{-1}{3} \right)^2 + \frac{2}{3} \cdot 3 =$$

$$38) \frac{2}{3} : \left(\frac{1}{3} \right)^{-2} - \left(1 - \frac{1}{2} \right)^2 =$$

$$39) \left(\frac{1}{3} - \frac{1}{2} \right) : \left(2 + \sqrt{\frac{1}{16}} \right) - \left(\frac{3}{2} \right)^2 + \frac{1}{2} =$$

$$40) \left(\frac{1}{3} : \frac{1}{2} \right) - \left(\frac{1}{4} : \frac{3}{2} \right) - \sqrt{\frac{1}{9}} =$$

$$41) \frac{1 - \left(1 - \frac{1}{2} \right)^2}{\sqrt{\frac{25}{4}} - \sqrt{\frac{1}{4}}} - (-1) =$$

$$42) \left[\left(-\frac{1}{2} \right)^3 \right]^4 : \left(-\frac{1}{2} \right)^{-5} =$$

$$43) 53^0 - \left(-\frac{1}{3} \right) - \left(-\frac{1}{2} \right) + \left(\frac{-1}{2} \right)^2 - \sqrt{\frac{1}{9}} =$$

$$44) \left(\frac{2}{4} \right)^{-2} + \left(\frac{-1}{2} \right)^{-1} + \left(-\frac{3}{2} \right)^{-2} =$$

$$45) \frac{\left(\frac{3}{2} \right)^{-1} + \left(\frac{43}{8} \right)^0}{\sqrt{\frac{4}{9}} - (-2)} + \left(\frac{50}{9} \right)^0 =$$

$$46) \left(\frac{4}{2} \right)^{-2} - \left(\frac{-1}{2} \right)^{-1} + \left(\frac{1}{2} \right)^2 - 5^0 =$$

$$47) \left(\frac{1}{2} \right)^2 - \left(\frac{2}{3} \right)^0 + \left(1 - \frac{1}{2} \right)^2 - \frac{3}{4} = \frac{-5}{4}$$

$$48) \sqrt[3]{\frac{1}{8}} - \left(\frac{1}{3} \right)^3 + \left(\frac{-2}{3} \right)^0 - \left(\frac{-2}{3} \right)^2 = \frac{55}{54}$$

$$49) \frac{2}{3} : \frac{4}{5} \cdot 2 + 3 \cdot \frac{1}{2} - \frac{4}{3} = \frac{11}{6}$$

$$50) \frac{7}{3} - \left(2 - \frac{1}{2} \right)^2 - 3 \left[-2 \left(\frac{1}{2} : 3 \right) + 1 \right] = \frac{-23}{12}$$

$$51) -4 + \left(\frac{3}{2} \right)^2 - (-2)^3 + \left(1 - \frac{1}{2} \right)^2 \cdot 2 = \frac{27}{4}$$

$$52) \frac{50^2 \cdot 45^3 \cdot 5^4}{27^4 \cdot 25} = \frac{2^2 \cdot 5^9}{3^6}$$

$$53) \frac{100^3 \cdot 16^2}{75^4 \cdot 32} = \frac{2^9}{3^4 \cdot 5^2}$$

$$54) \frac{9^4 \cdot 49^3 \cdot 15}{147^2 \cdot 81^3} = \frac{5 \cdot 7^2}{3^5}$$

$$55) \frac{(a^3)^2 \cdot (b^4)^3 \cdot a^4}{(b^7)^2 \cdot (a^2)^2} = \frac{a^6}{b^2}$$

$$56) \left[\left(\frac{2}{3} \right)^2 \right]^4 : \left(\frac{2}{3} \right)^6 - \left(\frac{2}{3} \right)^0 = -\frac{5}{9}$$

$$57) \left(-\frac{1}{3} \right)^3 : \left(\frac{-1}{3} \right)^2 + 2^{-2} \cdot 2^4 = \frac{11}{3}$$

$$58) \left(-\frac{2}{5} \right)^2 + \left(\frac{1}{5} \right)^2 - 3^{-2} \cdot 3^2 = \frac{1}{5} \cdot 3^{-4}$$

$$59) \left(\frac{2}{5} - 1 \right) \cdot 5 - \frac{3}{4} : \frac{1}{2} + 3 : \frac{1}{3} - 2 \cdot \frac{1}{2} : 3 = \frac{25}{6}$$

$$60) \frac{8 \cdot 2^4 \cdot (-2)^2}{\sqrt{64} \cdot \sqrt{16}} =$$

$$61) 125 \cdot [(-5)^3]^2 \cdot \frac{1}{625} \cdot 5^7 =$$

$$62) 2^3 \cdot (-2) \cdot 2^4 \cdot (-2)^3 \cdot 125^0 \cdot (-12)^0 =$$

$$63) \frac{\sqrt[3]{27} \cdot \sqrt[3]{64} \cdot 12^7}{12^0 \cdot (-12)^4} =$$

$$64) \frac{\sqrt{16}}{\sqrt{49}} + \frac{\sqrt{16}}{\sqrt{49}} - \frac{\sqrt{25}}{\sqrt{81}} + \frac{\sqrt{36}}{\sqrt{81}} =$$

$$65) \left(\frac{6}{7} : 5\right) - \left(\frac{1}{3} : \frac{3}{4}\right) - \left(\frac{7}{20}\right)^{-1} =$$

$$66) 3 - \left(\frac{1}{2} - \frac{1}{5}\right) + \frac{7}{3} + \left(\sqrt[12]{7^4}\right)^{\frac{21}{7}} =$$

$$67) \left(\frac{11}{4}\right)^{-2} \cdot \left(\frac{11}{4}\right)^3 \cdot \left(\frac{4}{11}\right)^{\frac{2}{3}} \cdot \left(\frac{11}{4}\right)^7 \cdot \left(\frac{11}{4}\right)^0$$

$$68) \left(\frac{2}{3}\right)^{-2} - \left(-\frac{1}{2}\right)^{-3} + \left[\left(-\frac{1}{2}\right)^{-3}\right]^{-1} = \frac{81}{8}$$

$$69) \frac{2}{5} - \left[-2\left(-1 + \frac{3}{2}\right) + \frac{2}{5}\right] + \sqrt[20]{\left[\left(2^3\right)^{\frac{5}{4}}\right]^{\frac{16}{3}}} = 3$$

TEMA 4

Resuelve y expresa en forma de fracción

$$1) 1,36 - 3,2\hat{5}$$

$$2) 2,3\hat{9} - 0,25$$

$$3) 2,0333333 - 1,11111...$$

$$4) 2,4 - 3,16666....$$

$$5) 1,0444444... - 3,22222....$$

$$6) 6,273 - 5,56$$

Expresa en forma de decimal

$$7) \frac{9}{4}$$

$$8) \frac{8}{3}$$

$$9) \frac{95}{90}$$

$$10) \frac{327}{100}$$

Expresa en forma de fracción

$$11) 6,427427427427...$$

$$12) 2,741741741...$$

$$13) 0,02$$

$$14) 5,333333...$$