Hoja de Actividades – WIRIS

Nombre: _____ Fecha: _____

1.– Calcula:

a) 12 : 2 – 4 : 2 – 42 : 7 – 20 : 4
b) (+ 15) : (– 5) – (– 18) : (– 2) + (– 32) : (– 8)
c) (– 3) (– 4) – (–24) : (+6) – (+5) (+3)
d) 16 – 30 : [6 – 2 (3 – 1) + 3]
e) [(+ 23) + (– 5)] : [12 – (+ 3) (– 2)]
f) [(– 30) + (– 18)] : (– 6) + [125 – (–30)] : (– 5)
g) (+ 9) : (+ 3) – (– 12) : (+ 2) – (+ 13) : (– 1)
h) (+ 10) : (– 5) – (– 7) : (– 1) + (– 4) : (– 2)

2.- Calcula las siguientes expresiones:

a) $2^2 - 4^2 : 8 + 3^0$
b) $2 \cdot 3^2 - 5^2 : 5 + 5^3$
c) $3^{-1} \cdot 3^1 - 3^0 + 1 - 25^1$
d) $3^3 : 3^1 - 1^0 - 3^2 : 2^{-1}$

3.- Efectúa:

a) $(-8)^3 \cdot \left[2 - (-6)^2 \cdot (-3)\right] - 4 \cdot (-10)^2$
b) $3 \cdot \left\{5 - 3 \cdot \left[6 - 2 \cdot (3-1)^4 - 7 \cdot (-5)^3\right]\right\}$
c) $2 - 3 \cdot (-4)^3 - 5 \cdot \left\{(-2)^2 \cdot (-3) - 4 \cdot 5 \cdot (-1)^{15} - 3 \cdot \left[1 - 2 \cdot (-3) - 4 \cdot (-1)\right]\right\}$
d) $(-7)^2 - \left\{3 \cdot (-5)^2 - (-4)^2 \cdot \left[(-3) \cdot (-4) - 2^3\right] - 3^2\right\}^5$
e) $(-3) \cdot (-5)^2 - \left[4 + 2^5 - 3^2 \cdot (-2)^2\right]^5 - (-1)^{10}$

4.- Calcular, simplificando el resultado:

a) $\dfrac{3}{\frac{5}{8}}$
b) $\dfrac{\frac{8}{13}}{-4}$
c) $\dfrac{5}{2 - \frac{3}{8}}$
d) $\dfrac{\frac{3}{8} - 2}{6}$
e) $\dfrac{1}{2} + \dfrac{3}{2} \cdot \dfrac{4}{5}$
f) $\dfrac{1}{3} + \dfrac{1}{5} - \dfrac{1}{7} + 2$
g) $\dfrac{4}{3}(-4)\dfrac{1}{2} + \dfrac{1}{3}$
h) $-3 + \dfrac{2}{7} + \dfrac{5}{3} \cdot \dfrac{-2}{9}$

i) $\left(\frac{3}{5}-\frac{1}{3}\right)(-2)\frac{2}{3}+5$

j) $(-2):\frac{4}{9}-(-2)\left(\frac{4}{3}-\frac{7}{5}\right)$

k) $\frac{3}{2}-\left((-3)\frac{4}{3}+2\right)-\frac{1}{4}$

l) $\frac{5}{2}:\left(\frac{-2}{5}+\frac{1}{6}\left(\frac{4}{7}-2\right)\right)$

m) $\frac{5}{-6}+\frac{3}{2}:\left(\frac{5}{4}-2\frac{3}{8}\right)$

n) $\frac{2}{7}-3\left(\frac{4}{5}+\frac{2}{3}\right)+1$

o) $3+\frac{2}{5}\cdot\left(6-\frac{1}{3}\right)-\frac{2}{7}:\frac{8}{3}$

p) $\frac{1}{5}:\frac{5}{4}-6\cdot\frac{2}{3}+10$

q) $\dfrac{\frac{2}{4}+6-\frac{5}{3}}{1+\frac{4}{5}}$

r) $\dfrac{9-\frac{7}{3}\cdot 4}{\frac{9}{8}-5:\frac{4}{3}}$

s) $\frac{7}{3}-\frac{4}{5}\cdot\frac{1}{2}:\left(\frac{3}{5}-\frac{4}{7}\right)$

t) $\left(\frac{2}{3}\right)^{-2}-\frac{3}{2}:\frac{5}{2}-10^{0}$

u) $\frac{3}{7}\left(\frac{4}{5}-3\right)-\frac{11}{4}\left(\frac{7}{3}-(-2)\right):(-1)$

v) $\left(\frac{5}{7}-3\right)-\frac{1}{6}+2:\left(-\frac{4}{3}+\frac{5}{2}-\frac{1}{6}\right)$

w) $\dfrac{\frac{2}{3}\left(\frac{3}{8}-\frac{1}{6}\cdot\frac{1}{2}\right)-\frac{2}{8}\cdot\frac{5}{3}}{\frac{2}{3}\left(\frac{1}{2}+\frac{2}{3}:\frac{1}{2}-\frac{5}{6}\right)}$

x) $\dfrac{2-\left[\left(\frac{7}{4}+\frac{1}{2}\right)-\left(\frac{4}{5}-\frac{1}{2}\right)\right]}{\left(\frac{3}{5}-\frac{4}{9}\right):\left(\frac{2}{5}-\frac{5}{3}\right)}$

y) $\frac{3}{8}\left(\frac{5}{3}-\frac{-1}{2}\right)-\frac{4}{11}\left(\frac{3}{4}-\frac{1}{5}\right)$

z) $\frac{5}{9}-\left(-\frac{3}{4}+\frac{1}{2}\right)+\frac{10}{3}\left(\frac{1}{2}-\frac{3}{5}\right)$

aa) $\frac{3}{8}\left(\frac{5}{3}-\frac{-1}{2}\right)-\frac{4}{11}\left(\frac{3}{4}-\frac{1}{5}\right)$

bb) $\frac{3}{5}:\frac{2}{3}-\frac{4}{5}\cdot\frac{4}{3}+\frac{1}{3}-\frac{3}{4}:\frac{3}{7}$

cc) $\left(\frac{2}{3}-\frac{7}{2}-\frac{5}{6}+\frac{1}{4}\right):\left(\frac{4}{3}+\frac{2}{3}-\frac{1}{6}\right)$

dd) $\dfrac{\frac{1}{5}-\frac{4}{9}}{5}-\frac{14}{3}$

ee) $\dfrac{5}{\frac{3}{4}-2}+\frac{3}{7}$

ff) $\frac{8}{3}:(-1)\left(\frac{4}{5}-\frac{4}{7}\right)$

gg) $\left(\frac{3}{7}+2\right)\frac{4}{11}:\left(\frac{3}{2}+6\right)$

hh) $\dfrac{4}{\frac{3}{7}-1}\left(\dfrac{\frac{5}{7}}{-3}+\frac{1}{5}\right)-2$

ii) $\dfrac{-7}{5}+\dfrac{\frac{5}{3}-\frac{1}{2}}{\frac{4}{7}+1}:\frac{3}{10}$

jj) $\dfrac{\frac{1}{4}-\frac{3}{7}(-5)+\frac{3}{7}:\frac{-4}{3}}{9-\frac{7}{2}+\frac{5}{3}}$

kk) $\frac{1}{2}+\frac{1}{3}+\dfrac{1}{\frac{1}{4}+\frac{1}{5}}$

ll) $\dfrac{\frac{5}{2}-1}{3}+\dfrac{-3}{2+\frac{7}{4}}$

mm) $\dfrac{4}{1-\dfrac{2}{\frac{3}{5}+\frac{3}{7}}-\frac{5}{4}}$

nn) $\dfrac{1+\dfrac{2}{3}-\dfrac{4}{\dfrac{2}{5}-\dfrac{7}{11}}}{2-\dfrac{3}{4}+(-4)}$

oo) $\dfrac{3}{4}-\dfrac{\dfrac{8}{3-\dfrac{5}{4+(-6)}}}{\dfrac{6}{\dfrac{4}{11}+\dfrac{3}{7}}}$

$2-\dfrac{4}{5}-\dfrac{1}{\dfrac{3}{7}-2}$

5.- Calcula:

a) $\sqrt[3]{5^2}$

b) $\sqrt{5}$

c) $\sqrt[3]{-5}$

d) $\sqrt[7]{-2}$

e) $\sqrt[4]{11}$

f) $\sqrt[4]{-450}$

6.- Halla el valor de los siguientes radicales (pon $a=3$):

a) $\sqrt[34]{a^{17}}$

b) $\sqrt[39]{a^{13}}$

c) $\sqrt[42]{a^{14}}$

d) $\sqrt[108]{a^{54}}$

e) $\sqrt[360]{a^{24}}$

f) $\sqrt[4]{a^{36}}$

7.- Calcula:

a) $8^{-\frac{1}{3}}$

b) $9^{-\frac{1}{2}}$

c) $32^{-\frac{2}{5}}$

d) $256^{\frac{3}{4}}$

e) $4^{\frac{3}{2}}+16^{-\frac{1}{2}}$

8.- Calcula:

a) $\dfrac{\sqrt[4]{16}}{\sqrt[4]{256}}$

b) $\dfrac{\sqrt[3]{54}}{\sqrt[3]{16}}$

c) $\dfrac{\sqrt{50}}{\sqrt[3]{-125}}$

d) $\sqrt[4]{32}:\sqrt[6]{2}$

e) $\left(\sqrt[4]{2^3}\right)^8$

f) $\sqrt[3]{8\cdot 7^3}$

g) $\sqrt{3}\cdot\sqrt{27}\cdot\sqrt[3]{81}$

h) $\sqrt[4]{2^3}\cdot\sqrt[4]{2}$

i) $\sqrt[3]{2\cdot 2^2}\cdot\sqrt[3]{4\cdot 2^2}$

j) $\sqrt{\sqrt{\sqrt{2}}}$

9.- Calcula

a) $\sqrt{2^6\cdot 4^4\cdot 3^6}$

b) $\sqrt{2^4\cdot 3^4\cdot 5^2}$

c) $\sqrt{2^8\cdot 3^2\cdot 5^2}$

d) $\sqrt[3]{216}$

e) $\sqrt[3]{3375}$

f) $\sqrt[4]{1296}$

g) $\sqrt[5]{7776}$

10.- Efectúa:

a) $3\sqrt{5}-2\sqrt{5}+4\sqrt{5}-7\sqrt{5}$
b) $6\sqrt{2}-2\sqrt{2}+3\sqrt{2}-4\sqrt{2}$
c) $\sqrt{2}+\sqrt{8}+\sqrt{18}-\sqrt{32}$
d) $\sqrt[3]{54}-\sqrt[3]{16}$

11.- Calcula

a) $\sqrt{\sqrt{\sqrt{2}}}$
b) $\sqrt{5\sqrt{5\sqrt{5}}}$
c) $\sqrt[3]{7\sqrt{7\cdot\sqrt[3]{7}}}$
d) $5\sqrt{18}-2\sqrt{27}-3\sqrt{72}=$
e) $-\sqrt{75}+2\sqrt{3}-3\sqrt{27}+7\sqrt{12}=$
f) $3\sqrt{20}-7\sqrt{45}-3\sqrt{80}=$
g) $-3\sqrt{8\cdot 3}-7\sqrt{2\cdot 3}+9\sqrt{98\cdot 3}=$
h) $\dfrac{3}{\sqrt{3}-\sqrt{2}}=$
i) $\dfrac{2\sqrt{3}-\sqrt{2}}{\sqrt{18}}=$
j) $\dfrac{3\sqrt{3}+\sqrt{2}}{\sqrt{12}}=$
k) $\dfrac{3}{\sqrt{5}-2}=$
l) $\dfrac{3\sqrt{6}+2\sqrt{2}}{3\sqrt{3}+2}=$
m) $\dfrac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}+\dfrac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$

12.- Calcula, poniendo $x=5$ e $y=7$:

a) $\left(\sqrt{x}\right)^3\cdot\sqrt[3]{x^2}\cdot\sqrt[4]{x^3}=$
b) $\dfrac{\left(\sqrt[4]{8^2}\right)^6}{\sqrt[15]{4^{12}}}=$
c) $\dfrac{\left(\sqrt[5]{x^2}\right)^4}{\sqrt[3]{x^7}\cdot\sqrt[15]{x^{12}}}=$
d) $\sqrt[3]{54\cdot x^8\cdot 4^5}=$
e) $\sqrt[5]{\dfrac{27}{x^7}}=$
f) $\sqrt[4]{\dfrac{32y^6}{16x^7}}=$

g) $\sqrt{\dfrac{32^3 y^6}{27^5 x^5}} =$

13.- Calcula:

a) $\log_2 \dfrac{1}{64} + \log_2 1 + \log_3 81 + \log_{11} 121$

b) $\log_2 \sqrt{2} + \log \sqrt{8} - \log \sqrt[3]{2}$

c) $\ln 1 + \ln e + \ln e^2 + \ln \sqrt{e} + \ln \dfrac{1}{e}$

d) $\log_5 625 - \log_3 243 + \log_4 256$

e) $\log_3 1 + \log_2 64 + \log_3 9 + \log_7 49$

f) $\log_2 4 + \log_3 81 - \log_6 216 + \log_4 64$

g) $\log_3 \dfrac{1}{9} - \log_5 0.2 + \log_6 \dfrac{1}{36} - \log_2 0.5$

SOLUCIONES

1.– Calcula:

a) 12 : 2 – 4 : 2 – 42 : 7 – 20 : 4 = – 6
b) (+ 15) : (– 5) – (– 18) : (– 2) + (– 32) : (– 8) = – 8
c) (– 3) (– 4) – (–24) : (+6) – (+5) (+3) = 1
d) 16 – 30 : [6 – 2 (3 – 1) + 3] = 10
e) [(+ 23) + (– 5)] : [12 – (+ 3) (– 2)] = – 1
f) [(– 30) + (– 18)] : (– 6) + [125 – (–30)] : (– 5) = – 23
g) (+ 9) : (+ 3) – (– 12) : (+ 2) – (+ 13) : (– 1) = 16
h) (+ 10) : (– 5) – (– 7) : (– 1) + (– 4) : (– 2) = – 7

2.- Calcula las siguientes expresiones:

a) $2^2 - 4^2 : 8 + 3^0 = 3$
b) $2 \cdot 3^2 - 5^2 : 5 + 5^3 = 138$
c) $3^{-1} \cdot 3^1 - 3^0 + 1 - 25^1 = -24$
d) $3^3 : 3^1 - 1^0 - 3^2 : 3^{-1} = -19$

3.- Efectúa:

a) $(-8)^3 \cdot \left[2 - (-6)^2 \cdot (-3)\right] - 4 \cdot (-10)^2 = -56\ 720$

b) $3 \cdot \left\{5 - 3 \cdot \left[6 - 2 \cdot (3-1)^4 - 7 \cdot (-5)^3\right]\right\} = -7\ 626$

c) $2 - 3 \cdot (-4)^3 - 5 \cdot \left\{(-2)^2 \cdot (-3) - 4 \cdot 5 \cdot (-1)^{15} - 3 \cdot \left[1 - 2 \cdot (-3) - 4 \cdot (-1)\right]\right\} = 319$

d) $(-7)^2 - \left\{3 \cdot (-5)^2 - (-4)^2 \cdot \left[(-3) \cdot (-4) - 2^3\right] - 3^2\right\}^5 = 17$

e) $(-3) \cdot (-5)^2 - \left[4 + 2^5 - 3^2 \cdot (-2)^2\right]^5 - (-1)^{10} = -76$

4.- Calcular, simplificando el resultado:

a) $\dfrac{\frac{3}{5}}{\frac{8}{8}} = \dfrac{24}{5}$

b) $\dfrac{\frac{8}{13}}{-4} = -\dfrac{2}{13}$

c) $\dfrac{5}{2 - \frac{3}{8}} = \dfrac{40}{13}$

d) $\dfrac{\frac{3}{8} - 2}{6} = -\dfrac{13}{48}$

e) $\dfrac{1}{2} + \dfrac{3}{2} \cdot \dfrac{4}{5} = \dfrac{17}{10}$

f) $\dfrac{1}{3} + \dfrac{1}{5} - \dfrac{1}{7} + 2 = \dfrac{251}{105}$

g) $\dfrac{4}{3}(-4)\dfrac{1}{2} + \dfrac{1}{3} = -\dfrac{7}{3}$

h) $-3 + \dfrac{2}{7} + \dfrac{5}{3} \cdot \dfrac{-2}{9} = -\dfrac{583}{189}$

i) $\left(\dfrac{3}{5} - \dfrac{1}{3}\right)(-2)\dfrac{2}{3} + 5 = \dfrac{209}{45}$

j) $(-2) : \dfrac{4}{9} - (-2)\left(\dfrac{4}{3} - \dfrac{7}{5}\right) = -\dfrac{139}{30}$

k) $\dfrac{3}{2} - \left((-3)\dfrac{4}{3} + 2\right) - \dfrac{1}{4} = \dfrac{13}{4}$

l) $\dfrac{5}{2} : \left(\dfrac{-2}{5} + \dfrac{1}{6}\left(\dfrac{4}{7} - 2\right)\right) = -\dfrac{525}{134}$

m) $\dfrac{5}{-6} + \dfrac{3}{2} : \left(\dfrac{5}{4} - 2\dfrac{3}{8}\right) = \dfrac{13}{6}$

n) $\frac{2}{7}-3\left(\frac{4}{5}+\frac{2}{3}\right)\cdot+1=-\frac{109}{35}$

o) $3+\frac{2}{5}\cdot\left(6-\frac{1}{3}\right)-\frac{2}{7}:\frac{8}{3}=\frac{2167}{420}$

p) $\frac{1}{5}:\frac{5}{4}-6\cdot\frac{2}{3}+10=\frac{154}{25}$

q) $\dfrac{\frac{2}{4}+6-\frac{5}{3}}{1+\frac{4}{5}}=\frac{145}{54}$

r) $\dfrac{9-\frac{7}{3}\cdot 4}{\frac{9}{8}-5:\frac{4}{3}}=\frac{8}{63}$

s) $\frac{7}{3}-\frac{4}{5}\cdot\frac{1}{2}\ :\ \left(\frac{3}{5}-\frac{4}{7}\right)=-\frac{35}{3}$

t) $\left(\frac{2}{3}\right)^{-2}-\frac{3}{2}:\frac{5}{2}-10^{0}=\frac{13}{20}$

u) $\frac{3}{7}\left(\frac{4}{5}-3\right)-\frac{11}{4}\left(\frac{7}{3}-(-2)\right):(-1)=\frac{4609}{420}$

v) $\left(\frac{5}{7}-3\right)-\frac{1}{6}+2\ :\ \left(-\frac{4}{3}+\frac{5}{2}-\frac{1}{6}\right)=-\frac{19}{42}$

w) $\dfrac{\frac{2}{3}\left(\frac{3}{8}-\frac{1}{6}\cdot\frac{1}{2}\right)-\frac{2}{8}\cdot\frac{5}{3}}{\frac{2}{3}\left(\frac{1}{2}+\frac{2}{3}:\frac{1}{2}-\frac{5}{6}\right)}=-\frac{1}{3}$

x) $\dfrac{2-\left[\left(\frac{7}{4}+\frac{1}{2}\right)-\left(\frac{4}{5}-\frac{1}{2}\right)\right]}{\left(\frac{3}{5}-\frac{4}{9}\right):\left(\frac{2}{5}-\frac{5}{3}\right)}=-\frac{57}{140}$

y) $\frac{3}{8}\left(\frac{5}{3}-\frac{-1}{2}\right)-\frac{4}{11}\left(\frac{3}{4}-\frac{1}{5}\right)=\frac{49}{80}$

z) $\frac{5}{9}-\left(-\frac{3}{4}+\frac{1}{2}\right)+\frac{10}{3}\left(\frac{1}{2}-\frac{3}{5}\right)=\frac{17}{36}$

aa) $\frac{3}{8}\left(\frac{5}{3}-\frac{-1}{2}\right)-\frac{4}{11}\left(\frac{3}{4}-\frac{1}{5}\right)=\frac{49}{80}$

bb) $\frac{3}{5}:\frac{2}{3}-\frac{4}{5}\cdot\frac{4}{3}+\frac{1}{3}-\frac{3}{4}:\frac{3}{7}=-\frac{19}{12}$

cc) $\left(\frac{2}{3}-\frac{7}{2}-\frac{5}{6}+\frac{1}{4}\right):\left(\frac{4}{3}+\frac{2}{3}-\frac{1}{6}\right)=-\frac{41}{22}$

dd) $\dfrac{\frac{1}{5}-\frac{4}{9}}{5}-\frac{14}{3}=-\frac{1061}{225}$

ee) $\dfrac{5}{\frac{3}{4}-2}+\frac{3}{7}=-\frac{25}{7}$

ff) $\frac{8}{3}:(-1)\left(\frac{4}{5}-\frac{4}{7}\right)=-\frac{64}{105}$

gg) $\left(\frac{3}{7}+2\right)\frac{4}{11}:\left(\frac{3}{2}+6\right)=\frac{136}{1155}$

hh) $\dfrac{4}{\frac{3}{7}-1}\left(\dfrac{\frac{5}{7}}{-3}+\frac{1}{5}\right)-2=-\frac{26}{15}$

ii) $\dfrac{-7}{5}+\dfrac{\frac{5}{3}-\frac{1}{2}}{\frac{4}{7}+1}:\frac{3}{10}=\frac{532}{495}$

jj) $\dfrac{\frac{1}{4}-\frac{3}{7}(-5)+\frac{3}{7}:\frac{-4}{3}}{9-\frac{7}{2}+\frac{5}{3}}=\frac{87}{301}$

kk) $\frac{1}{2}+\frac{1}{3}+\dfrac{1}{\frac{1}{4}+\frac{1}{5}}=\frac{55}{18}$

ll) $\dfrac{\frac{5}{2}-1}{3}+\dfrac{-3}{2+\frac{7}{4}}=-\frac{3}{10}$

mm) $\dfrac{4}{1-\dfrac{2}{\frac{3}{5}+\frac{3}{7}}-\frac{5}{4}}=-\frac{144}{79}$

nn) $\dfrac{1+\frac{2}{3}-\dfrac{4}{\frac{2}{5}-\frac{7}{11}}}{2-\frac{3}{4}+(-4)}=-\frac{2900}{429}$

oo) $\frac{3}{4}-\dfrac{\dfrac{8}{3-\dfrac{5}{4+(-6)}}\dfrac{6}{\frac{4}{11}+\frac{3}{7}}}{2-\frac{4}{5}-\dfrac{1}{\frac{3}{7}-2}}=\frac{149027}{270276}$

5.- Calcula:

a) $\sqrt[3]{5^2} = 2.924017738$

b) $\sqrt{5} = 2.236067977$

c) $\sqrt[3]{-5} = -1.709975947$

d) $\sqrt[7]{-2} = -1.104089514$

e) $\sqrt[4]{11} = 1.821160287$

f) $\sqrt[4]{-450} = -E-$

6.- Halla el valor de los siguientes radicales (pon $a = 3$):

a) $\sqrt[34]{a^{17}} = 1.732050808$

b) $\sqrt[39]{a^{13}} = 1.44224957$

c) $\sqrt[42]{a^{14}} = 1.44224957$

d) $\sqrt[108]{a^{54}} = 1.732050808$

e) $\sqrt[360]{a^{24}} = 1.075989625$

f) $\sqrt[4]{a^{36}} = 19\ 683$

7.- Escribe en forma de raíz y calcula:

a) $8^{-\frac{1}{3}} = \sqrt[3]{8^{-1}} = 0.5$

b) $9^{-\frac{1}{2}} = \sqrt{9^{-1}} = 0.\widehat{3}$

c) $32^{-\frac{2}{5}} = \sqrt[5]{32^{-2}} = 0.25$

d) $256^{\frac{3}{4}} = \sqrt[4]{256^3} = 64$

e) $4^{\frac{3}{2}} + 16^{-\frac{1}{2}} = \sqrt{4^3} + \sqrt{16^{-1}} = 8.25$

8.- Calcula:

a) $\dfrac{\sqrt[4]{16}}{\sqrt[4]{256}} = 0.5$

b) $\dfrac{\sqrt[3]{54}}{\sqrt[3]{16}} = 1.5$

c) $\dfrac{\sqrt{50}}{\sqrt[3]{-125}} = -1.414213562$

d) $\sqrt[4]{32} : \sqrt[6]{2} = 2.118926189$

e) $\left(\sqrt[4]{2^3}\right)^8 = 64$

f) $\sqrt[3]{8 \cdot 7^3} = 14$

g) $\sqrt{3} \cdot \sqrt{27} \cdot \sqrt[3]{81} = 38.94073839$

h) $\sqrt[4]{2^3} \cdot \sqrt[4]{2} = 2$

i) $\sqrt[3]{2 \cdot 2^2} \cdot \sqrt[3]{4 \cdot 2^2} = 5.0396842$

j) $\sqrt{\sqrt{\sqrt{2}}} = 1.090507733$

9.- Calcula

a) $\sqrt{2^6 \cdot 4^4 \cdot 3^6} = 3\ 456$

b) $\sqrt{2^4 \cdot 3^4 \cdot 5^2} = 180$

c) $\sqrt{2^8 \cdot 3^2 \cdot 5^2} = 240$

d) $\sqrt[3]{216} = 6$

e) $\sqrt[3]{3375} = 15$

f) $\sqrt[4]{1296} = 6$

g) $\sqrt[5]{7776} = 6$

10.- Efectúa:

a) $3\sqrt{5} - 2\sqrt{5} + 4\sqrt{5} - 7\sqrt{5} = -2\sqrt{5} = -4.472135955$

b) $6\sqrt{2} - 2\sqrt{2} + 3\sqrt{2} - 4\sqrt{2} = 3\sqrt{2} = 4.242640687$

c) $\sqrt{2} + \sqrt{8} + \sqrt{18} - \sqrt{32} = 2.828427125$

d) $\sqrt[3]{54} - \sqrt[3]{16} = 1.25992105$

11.- Calcula

a) $\sqrt{\sqrt{\sqrt{2}}} = 1.090507733$

b) $\sqrt{5\sqrt{5\sqrt{5}}} = 4.08882717$

c) $\sqrt[3]{7\sqrt{7\cdot\sqrt[3]{7}}} = 2.9478$

d) $5\sqrt{18} - 2\sqrt{27} - 3\sqrt{72} = -\ 14.63494553$

e) $-\sqrt{75} + 2\sqrt{3} - 3\sqrt{27} + 7\sqrt{12} = 3.4641016615$

f) $3\sqrt{20} - 7\sqrt{45} - 3\sqrt{80} = -\ 60.37383539$

g) $-3\sqrt{8\cdot 3} - 7\sqrt{2\cdot 3} + 9\sqrt{98\cdot 3} = 122.4744871$

h) $\dfrac{3}{\sqrt{3}-\sqrt{2}} = 9.43879311$

i) $\dfrac{2\sqrt{3}-\sqrt{2}}{\sqrt{18}} = 0.483163247$

j) $\dfrac{3\sqrt{3}+\sqrt{2}}{\sqrt{12}} = 1.90824829$

k) $\dfrac{3}{\sqrt{5}-2} = 12.70820393$

l) $\dfrac{3\sqrt{6}+2\sqrt{2}}{3\sqrt{3}+2} = 1.414213562$

m) $\dfrac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} + \dfrac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}} = 7.872983346 + 0.127016653 = 8$

12.- Calcula, poniendo $x = 5$ e $y = 7$:

a) $\left(\sqrt{x}\right)^3 \cdot \sqrt[3]{x^2} \cdot \sqrt[4]{x^3} = 109.31$

b) $\dfrac{\left(\sqrt[4]{8^2}\right)^6}{\sqrt[15]{4^{12}}} = 168.9$

c) $\dfrac{\left(\sqrt[5]{x^2}\right)^4}{\sqrt[3]{x^7}\cdot\sqrt[15]{x^{12}}} = 0.084771$

d) $\sqrt[3]{54\cdot x^8\cdot 4^5} = 2785$

e) $\sqrt[5]{\dfrac{27}{x^7}} = 0.2031$

f) $\sqrt[4]{\dfrac{32y^6}{16x^7}} = 1.3174$

g) $\sqrt{\dfrac{32^3 y^6}{27^5 x^5}} = 0.29321$

13.- Calcula:

a) $\log_2 \dfrac{1}{64} + \log_2 1 + \log_3 81 + \log_{11} 121 = 0$

b) $\log_2 \sqrt{2} + \log\sqrt{8} - \log\sqrt[3]{2} = 0.8512$

c) $\ln 1 + \ln e + \ln e^2 + \ln \sqrt{e} + \ln \frac{1}{e} = \frac{5}{2} = 2.5$

d) $\log_5 625 - \log_3 243 + \log_4 256 = 3$

e) $\log_3 1 + \log_2 64 + \log_3 9 + \log_7 49 = 10$

f) $\log_2 4 + \log_3 81 - \log_6 216 + \log_4 64 = 6$

g) $\log_3 \frac{1}{9} - \log_5 0.2 + \log_6 \frac{1}{36} - \log_2 0.5 = -2$