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| | COLEGIO ITALICA<br>Arguijo 5-7<br>SEVILLA 41003 | MATEMATICAS 3º ESO<br><br>EVAL: 1ª<br>FECHA: 7-11-16 | |
| NOMBRE | | | |

**Ejercicio 1:** **Opera y simplifica:**

$$a)\ \frac{\frac{1}{5}+\frac{3}{5}\cdot\frac{25}{6}-2:\frac{4}{9}}{\frac{4}{9}\cdot\left(\frac{1}{5}-2\right)-\frac{1}{3}}=\frac{\frac{1}{5}+\frac{5}{2}-\frac{9}{2}}{\frac{4}{9}\cdot\left(\frac{-9}{5}\right)-\frac{1}{3}}=\frac{\frac{1}{5}-2}{\frac{-4}{5}-\frac{1}{3}}=\frac{\frac{-9}{5}}{\frac{-17}{15}}=\frac{-9\cdot 15}{-17\cdot 5}=\boxed{\frac{27}{17}}$$

$$b)\ \frac{0'45\cdot 0'0\widehat{5}}{2'\widehat{5}-1'\widehat{3}}=\frac{\frac{45}{100}\cdot\frac{5}{90}}{\frac{23}{9}-\frac{12}{9}}=\frac{\frac{1}{40}}{\frac{11}{9}}=\boxed{\frac{9}{440}}$$

**Ejercicio 2:** **Opera las siguientes expresiones con potencias:**

$$a)\ \frac{27^3\cdot 6^4\cdot 8^{-2}}{3^{-8}\cdot 12^6}=\frac{\left(3^3\right)^3\cdot(2\cdot 3)^4\cdot\left(2^3\right)^{-2}}{3^{-8}\cdot\left(2^2\cdot 3\right)^6}=\frac{3^9\cdot 2^4\cdot 3^4\cdot 2^{-6}}{3^{-8}\cdot 2^{12}\cdot 3^6}=\frac{2^{-2}\cdot 3^{13}}{2^{12}\cdot 3^{-2}}=2^{-14}\cdot 3^{15}=\boxed{\frac{3^{15}}{2^{14}}}$$

$$b)\ \frac{\left(\frac{2}{3}\right)^5\cdot\left(\frac{2}{3}\right)^4}{\left(\frac{4}{9}\right)^2\cdot\left(\frac{3}{2}\right)^{-3}}=\frac{\left(\frac{2}{3}\right)^9}{\left(\frac{2}{3}\right)^4\cdot\left(\frac{2}{3}\right)^3}=\frac{\left(\frac{2}{3}\right)^9}{\left(\frac{2}{3}\right)^7}=\boxed{\left(\frac{2}{3}\right)^2}$$

$$c)\ \frac{x^2\cdot y^{-3}\cdot\left(x^2\cdot y\right)^4}{\left(y^{-3}\cdot x^5\right)^2}=\frac{x^2\cdot y^{-3}\cdot x^8\cdot y^4}{y^{-6}\cdot x^{10}}=\frac{x^{10}\cdot y}{y^{-6}\cdot x^{10}}=\boxed{y^7}$$

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**Ejercicio 3:** **Opera las siguientes expresiones con radicales:**

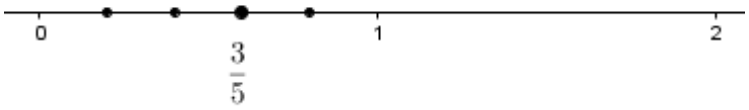
$$a)\ \frac{\sqrt[3]{a^2}\cdot\sqrt{a}}{\sqrt[4]{\sqrt{a^5}}}=\frac{\sqrt[3]{a^2}\cdot\sqrt{a}}{\sqrt[8]{a^5}}=\frac{\sqrt[24]{a^{16}}\cdot\sqrt[24]{a^{12}}}{\sqrt[24]{a^{15}}}=\boxed{\sqrt[24]{a^{13}}}$$

$$b)\ \frac{\sqrt[5]{4}\cdot\sqrt[4]{8}}{\sqrt{2}}=\frac{\sqrt[20]{4^4}\cdot\sqrt[20]{8^5}}{\sqrt[20]{2^{10}}}=\sqrt[20]{\frac{2^8\cdot2^{15}}{2^{10}}}=\boxed{\sqrt[20]{2^{13}}}$$

$$c)\ 2\sqrt{20}-7\sqrt{45}+\sqrt{18}-\sqrt[4]{25}=2\sqrt{2^2\cdot5}-7\sqrt{3^2\cdot5}+\sqrt{3^2\cdot2}-\sqrt[4]{5^2}=$$
$$4\sqrt{5}-21\sqrt{5}+3\sqrt{2}-\sqrt{5}=\boxed{-18\sqrt{5}+3\sqrt{2}}$$

$$d)\ 4\sqrt[3]{54}-2\sqrt[3]{250}+\frac{1}{2}\sqrt[3]{16}=4\sqrt[3]{3^3\cdot2}-2\sqrt[3]{5^3\cdot2}+\frac{1}{2}\sqrt[3]{2^4}=$$
$$12\sqrt[3]{2}-10\sqrt[3]{2}+\frac{2}{2}\sqrt[3]{2}=\boxed{3\cdot\sqrt[3]{2}}$$

**Ejercicio 4:** **Representa en la recta real las fracciones:** $\frac{3}{5}$ *y* $\frac{14}{3}$




$\frac{14}{3}=4+\frac{2}{3}$