

Departamento de Matemáticas $1^{\underline{0}}$ Bachillerato



Potencias y radicales

1. Calcula:

(a)
$$\frac{3^{-2} \cdot 3^5 \cdot 2^3}{(3 \cdot 2)^4}$$

Sol: $\frac{1}{6}$

(b)
$$3^{-5} \cdot (\frac{1}{3})^{-2} \cdot 81$$

Sol: 3

(c)
$$(\frac{5}{4})^5 \cdot \frac{2^6}{5^2}$$

Sol: $\frac{125}{16}$

(d)
$$\frac{2^{-2} \cdot (2^2)^3}{2^{-3}}$$

Sol: 128

(e)
$$\frac{5^{-3} \cdot 5^{-1} \cdot 5^2}{5^0 + 5^6}$$

Sol: $\frac{1}{390650}$

(f)
$$(\frac{2}{3})^{-2} \cdot (\frac{3}{2})^4$$

Sol: $\frac{729}{64}$

$$\left(g\right) \quad \frac{\sqrt{2} \cdot \left(\sqrt{2}\right)^3 \cdot \left(\sqrt{5}\right)^3}{\left(5\sqrt{2}\right)^2}$$

Sol: $\frac{2\sqrt{5}}{5}$

(h)
$$\frac{9^{\frac{1}{2} \cdot 3^{-1} \cdot 2^{\frac{3}{2}}}{\sqrt{2}}$$

Sol: 2

2. Calcula:

(a)
$$\frac{3^{-2} \cdot 3^{5} \cdot 2^{3}}{(3 \cdot 2)^{4}}$$

Sol: $\frac{1}{6}$

(b)
$$3^{-5} \cdot (\frac{1}{3})^{-2} \cdot 81$$

Sol: 3

(c)
$$(\frac{5}{4})^5 \cdot \frac{2^6}{5^2}$$

Sol: $\frac{125}{16}$

(d)
$$\frac{2^{-2} \cdot (2^2)^3}{2^{-3}}$$

Sol: 128

(e)
$$\frac{5^{-3} \cdot 5^{-1} \cdot 5^2}{5^0 + 5^6}$$

Sol: $\frac{1}{390650}$

(f) $(\frac{2}{3})^{-2} \cdot (\frac{3}{2})^4$

$$(\frac{1}{3})$$

Sol: $\frac{729}{64}$

 $\frac{\sqrt{2}{\cdot}{\left(\sqrt{2}\right)}^3{\cdot}{\left(\sqrt{5}\right)}^3}{\left(5\sqrt{2}\right)^2}$ (g)

Sol: $\frac{2\sqrt{5}}{5}$

 $\frac{9^{\frac{1}{2} \cdot 3^{-1} \cdot 2^{\frac{3}{2}}}{\sqrt{2}}$ (h)

Sol: 2

(i) $\sqrt{16}$

Sol: 4

(j) $\sqrt[4]{-16}$

Sol: $2\sqrt[4]{-1}$

 $\sqrt[3]{27}$ (k)

Sol: 3

 $\sqrt[5]{-1}$ (l)

Sol: $\sqrt[5]{-1}$

 $\sqrt{1225}$ (m)

Sol: 35

(n) $\sqrt[7]{1}$

Sol: 1