

The background features a dark purple grid pattern overlaid with several thick, overlapping diagonal lines in yellow, orange, red, green, and blue. The word 'MATEMÁTICA' is written in white, bold, uppercase letters across the center, following the angle of the lines.

**MATEMÁTICA**

# AGORA É COM VOCÊ...

**Simplifique a expressão:**

$$\sqrt{20} + \sqrt{45} =$$

$$2\sqrt{5} + 3\sqrt{5} =$$

$$(2 + 3)\sqrt{5} = 5\sqrt{5}$$

## Multiplicação com radicais

$$\sqrt[4]{2} \cdot \sqrt[4]{8} = \sqrt[4]{2 \cdot 8} = \sqrt[4]{16} =$$

$$\sqrt[4]{2^4} = 2$$

## FATORES EXTERNOS

$$-4\sqrt{3} \times 2\sqrt{2} =$$

$$(-4 \times 2)\sqrt{3 \times 2} =$$


$$-8\sqrt{6}$$

$$\left(-2\sqrt{3}\right) \times \left(-\sqrt{3}\right) =$$

$$\left(-2\right) \cdot \left(-1\right) \sqrt{3^2} =$$

$$2 \cdot 3 = 6$$

Usando a propriedade distributiva:


$$\begin{aligned}\sqrt{7} \cdot (1 - \sqrt{7}) &= \sqrt{7} \cdot 1 - \sqrt{7} \cdot \sqrt{7} \\ &= \sqrt{7} - \sqrt{7^2} \\ &= \sqrt{7} - 7\end{aligned}$$

$$(\sqrt{2} + 2)(3\sqrt{2} - 3) =$$

$$3\sqrt{2}^2 - 3 \cdot \sqrt{2} + 2 \cdot 3\sqrt{2} - 2 \cdot 3 =$$

$$\cancel{6} - 3\sqrt{2} + 6\sqrt{2} - \cancel{6} = 3\sqrt{2}$$

**Produto da soma pela diferença de dois termos:**

$$\begin{aligned}(\sqrt{2} + 2)(\sqrt{2} - 2) &= (\sqrt{2})^2 - 2^2 \\ &= 2 - 4 \\ &= -2\end{aligned}$$



## Divisão com radicais

$$\sqrt[3]{20} : \sqrt[3]{10} = \sqrt[3]{20:10} = \sqrt[3]{2}$$

$$30\sqrt{15} : 5\sqrt{3} = (30:5)\sqrt{15:3} = 6\sqrt{5}$$

$$(12\sqrt{6} - 2\sqrt{10}) : (2\sqrt{2}) =$$

$$\frac{12\sqrt{6}}{2\sqrt{2}} - \frac{2\sqrt{10}}{2\sqrt{2}} = 6\sqrt{3} - \sqrt{5}$$