



Propriétés de la racine carrée

Exercice n°1 : Calculer les produits suivants.

$A = \sqrt{4} \times \sqrt{25}$	$B = \sqrt{16} \times \sqrt{9}$	$C = \sqrt{12} \times \sqrt{3}$
$D = \sqrt{3} \times \sqrt{10} \times \sqrt{30}$	$E = \sqrt{2} \times \sqrt{3} \times \sqrt{6} \times \sqrt{9}$	$F = 7\sqrt{3} \times 5\sqrt{3}$
$G = 4\sqrt{5} \times 6\sqrt{7}$	$H = 3\sqrt{3} \times (-4\sqrt{13})$	$I = -6\sqrt{2} \times (-4\sqrt{5})$

Exercice n°2 : Calculer les carrés suivants.

$A = (\sqrt{7})^2$	$B = (\sqrt{11})^2$	$C = (7\sqrt{2})^2$
$D = (-5\sqrt{5})^2$	$E = (6\sqrt{7})^2$	$F = (-3\sqrt{12})^2$
$G = (-4\sqrt{22})^2$	$H = (10\sqrt{2})^2$	$I = (5\sqrt{40})^2$

Exercice n°3 : Calculer les quotients suivants.

$A = \frac{\sqrt{75}}{\sqrt{3}}$	$B = \frac{\sqrt{125}}{\sqrt{5}}$	$C = \frac{\sqrt{343}}{\sqrt{7}}$
$D = \frac{\sqrt{12}}{\sqrt{27}}$	$E = \frac{\sqrt{8}}{\sqrt{50}}$	$F = \frac{\sqrt{7}}{\sqrt{63}}$
$G = \frac{\sqrt{32}}{\sqrt{2}}$	$H = \frac{\sqrt{16}}{\sqrt{64}}$	$I = 3\sqrt{\frac{12}{27}}$

Exercice n°4 : Calculer les produits suivants.

$A = \frac{\sqrt{4}}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{4}}$	$B = \frac{\sqrt{63}}{\sqrt{8}} \times \frac{\sqrt{2}}{\sqrt{7}}$	$C = \frac{\sqrt{6}}{\sqrt{14}} \times \frac{\sqrt{7}}{\sqrt{3}}$
$D = \frac{\sqrt{18}}{\sqrt{15}} \times \frac{\sqrt{6}}{\sqrt{5}}$	$E = \frac{\sqrt{32}}{\sqrt{80}} \times \sqrt{10}$	$F = \frac{\sqrt{80}}{\sqrt{27}} \times \frac{\sqrt{3}}{\sqrt{5}}$
$G = \frac{\sqrt{5}}{\sqrt{6}} \times \sqrt{30}$	$H = \frac{3}{\sqrt{27}} \times \sqrt{75}$	$I = \frac{\sqrt{80}}{\sqrt{13}} \times \frac{\sqrt{39}}{\sqrt{4}}$



Correction

Exercice n°1 : Calculer les produits suivants.

$A = \sqrt{4} \times \sqrt{25}$ $A = 2 \times 5$ $A = 10$	$B = \sqrt{16} \times \sqrt{9}$ $B = 4 \times 3$ $B = 12$	$C = \sqrt{12} \times \sqrt{3}$ $C = \sqrt{4 \times 3} \times \sqrt{3}$ $C = \sqrt{4} \times \sqrt{3} \times \sqrt{3}$ $C = 2 \times 3$ $C = 6$
$D = \sqrt{3} \times \sqrt{10} \times \sqrt{30}$ $D = \sqrt{3} \times \sqrt{10} \times \sqrt{3 \times 10}$ $D = \sqrt{3} \times \sqrt{10} \times \sqrt{3} \times \sqrt{10}$ $D = \sqrt{3} \times \sqrt{3} \times \sqrt{10} \times \sqrt{10}$ $D = 3 \times 10$ $D = 30$	$E = \sqrt{2} \times \sqrt{3} \times \sqrt{6} \times \sqrt{9}$ $E = \sqrt{2} \times \sqrt{3} \times \sqrt{2 \times 3} \times \sqrt{9}$ $E = \sqrt{2} \times \sqrt{3} \times \sqrt{2} \times \sqrt{3} \times \sqrt{9}$ $E = \sqrt{2} \times \sqrt{2} \times \sqrt{3} \times \sqrt{3} \times \sqrt{9}$ $E = 2 \times 3 \times 3$ $E = 18$	$F = 7\sqrt{3} \times 5\sqrt{3}$ $F = 7 \times 5 \times \sqrt{3} \times \sqrt{3}$ $F = 35 \times 3$ $F = 105$
$G = 4\sqrt{5} \times 6\sqrt{7}$ $G = 4 \times 6 \times \sqrt{5} \times \sqrt{7}$ $G = 24\sqrt{5 \times 7}$ $G = 24\sqrt{35}$	$H = 3\sqrt{3} \times (-4\sqrt{13})$ $H = -4 \times 3 \times \sqrt{3} \times \sqrt{13}$ $H = -12\sqrt{3 \times 13}$ $H = -12\sqrt{39}$	$I = -6\sqrt{2} \times (-4\sqrt{5})$ $I = -6 \times (-4) \times \sqrt{2} \times \sqrt{5}$ $I = 24\sqrt{2 \times 5}$ $I = 24\sqrt{10}$

Exercice n°2 : Calculer les carrés suivants.

$A = (\sqrt{7})^2$ $A = 7$	$B = (\sqrt{11})^2$ $B = 11$	$C = (7\sqrt{2})^2$ $C = 49 \times 2$ $C = 98$
$D = (-5\sqrt{5})^2$ $D = 25 \times 5$ $D = 125$	$E = (6\sqrt{7})^2$ $E = 36 \times 7$ $E = 252$	$F = (-3\sqrt{12})^2$ $F = 9 \times 12$ $F = 108$
$G = (-4\sqrt{22})^2$ $G = 16 \times 22$ $G = 352$	$H = (10\sqrt{2})^2$ $H = 100 \times 2$ $H = 200$	$I = (5\sqrt{40})^2$ $I = 25 \times 40$ $I = 1\,000$

Exercice n°3 : Calculer les quotients suivants.

$A = \frac{\sqrt{75}}{\sqrt{3}}$ $A = \sqrt{\frac{75}{3}}$ $A = \sqrt{\frac{25 \times 3}{3}}$ $A = \sqrt{25}$ $A = 5$	$B = \frac{\sqrt{125}}{\sqrt{5}}$ $B = \sqrt{\frac{125}{5}}$ $B = \sqrt{\frac{25 \times 5}{5}}$ $B = \sqrt{25}$ $B = 5$	$C = \frac{\sqrt{343}}{\sqrt{7}}$ $C = \sqrt{\frac{343}{7}}$ $C = \sqrt{\frac{49 \times 7}{7}}$ $C = \sqrt{49}$ $C = 7$
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$D = \frac{\sqrt{12}}{\sqrt{27}}$ $D = \sqrt{\frac{12}{27}}$ $D = \sqrt{\frac{3 \times 4}{3 \times 9}}$ $D = \sqrt{\frac{4}{9}}$ $D = \frac{\sqrt{4}}{\sqrt{9}}$ $D = \frac{2}{3}$	$E = \frac{\sqrt{8}}{\sqrt{50}}$ $E = \sqrt{\frac{8}{50}}$ $E = \sqrt{\frac{4 \times 2}{2 \times 25}}$ $E = \sqrt{\frac{4}{25}}$ $E = \frac{\sqrt{4}}{\sqrt{25}}$ $E = \frac{2}{5}$	$F = \frac{\sqrt{7}}{\sqrt{63}}$ $F = \sqrt{\frac{7}{63}}$ $F = \sqrt{\frac{7}{7 \times 9}}$ $F = \sqrt{\frac{1}{9}}$ $F = \frac{\sqrt{1}}{\sqrt{9}}$ $F = \frac{1}{3}$
$G = \frac{\sqrt{32}}{\sqrt{2}}$ $G = \sqrt{\frac{32}{2}}$ $G = \sqrt{\frac{2 \times 16}{2}}$ $G = \sqrt{16}$ $G = 4$	$H = \frac{\sqrt{16}}{\sqrt{64}}$ $H = \sqrt{\frac{16}{64}}$ $H = \sqrt{\frac{8 \times 2}{8 \times 4 \times 2}}$ $H = \sqrt{\frac{1}{4}}$ $H = \frac{\sqrt{1}}{\sqrt{4}}$ $H = \frac{1}{2}$	$I = 3\sqrt{\frac{12}{27}}$ $I = 3\sqrt{\frac{3 \times 4}{3 \times 9}}$ $I = 3\sqrt{\frac{4}{9}}$ $I = 3\frac{\sqrt{4}}{\sqrt{9}}$ $I = 3 \times \frac{2}{3}$ $I = 2$

Exercice n°4 : Calculer les produits suivants.

$A = \frac{\sqrt{4}}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{4}}$ $A = 1$	$B = \frac{\sqrt{63}}{\sqrt{8}} \times \frac{\sqrt{2}}{\sqrt{7}}$ $B = \sqrt{\frac{63 \times 2}{8 \times 7}}$ $B = \sqrt{\frac{9 \times 7 \times 2}{4 \times 2 \times 7}}$ $B = \sqrt{\frac{9}{4}}$ $B = \frac{\sqrt{9}}{\sqrt{4}}$ $B = \frac{3}{2}$	$C = \frac{\sqrt{6}}{\sqrt{14}} \times \frac{\sqrt{7}}{\sqrt{3}}$ $C = \sqrt{\frac{6 \times 7}{14 \times 3}}$ $C = \sqrt{\frac{3 \times 2 \times 7}{7 \times 2 \times 3}}$ $C = 1$
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$$D = \frac{\sqrt{18}}{\sqrt{15}} \times \frac{\sqrt{6}}{\sqrt{5}}$$

$$D = \sqrt{\frac{18 \times 6}{15 \times 5}}$$

$$D = \sqrt{\frac{3 \times 6 \times 6}{3 \times 5 \times 5}}$$

$$D = \sqrt{\frac{36}{25}}$$

$$D = \frac{\sqrt{36}}{\sqrt{25}}$$

$$D = \frac{6}{5}$$

$$E = \frac{\sqrt{32}}{\sqrt{80}} \times \sqrt{10}$$

$$E = \sqrt{\frac{32 \times 10}{80}}$$

$$E = \sqrt{\frac{4 \times 8 \times 10}{8 \times 10}}$$

$$E = \sqrt{4}$$

$$E = 2$$

$$F = \frac{\sqrt{80}}{\sqrt{27}} \times \frac{\sqrt{3}}{\sqrt{5}}$$

$$F = \sqrt{\frac{80 \times 3}{27 \times 5}}$$

$$F = \sqrt{\frac{16 \times 5 \times 3}{3 \times 9 \times 5}}$$

$$F = \sqrt{\frac{16}{9}}$$

$$F = \frac{\sqrt{16}}{\sqrt{9}}$$

$$F = \frac{4}{3}$$

$$G = \frac{\sqrt{5}}{\sqrt{6}} \times \sqrt{30}$$

$$G = \sqrt{\frac{5 \times 30}{6}}$$

$$G = \sqrt{\frac{5 \times 5 \times 6}{6}}$$

$$G = \sqrt{25}$$

$$G = 5$$

$$H = \frac{3}{\sqrt{25}} \times \sqrt{75}$$

$$H = 3\sqrt{\frac{75}{25}}$$

$$H = 3\sqrt{\frac{3 \times 5 \times 5}{5 \times 5}}$$

$$H = 3\sqrt{3}$$

$$I = \frac{\sqrt{80}}{\sqrt{13}} \times \frac{\sqrt{39}}{\sqrt{4}}$$

$$I = \sqrt{\frac{80 \times 39}{13 \times 4}}$$

$$I = \sqrt{\frac{4 \times 5 \times 4 \times 3 \times 13}{13 \times 4}}$$

$$I = \sqrt{4 \times 5 \times 3}$$

$$I = \sqrt{4} \times \sqrt{5 \times 3}$$

$$I = 2\sqrt{15}$$