1) Entoure chaque fois la bonne réponse :

$\sqrt{9+16}$ = **5** 7 25

$\sqrt{8}+\sqrt{8}$ = 4 **$\sqrt{32}$** 8

$3\sqrt{2}$ = $\sqrt{6}$ $\sqrt{9}$ **$\sqrt{18}$**

$\sqrt{\sqrt{36}}$ = 3 **$\sqrt{6}$** 6

2) Simplifie :

1) $\sqrt{27}=\sqrt{3^2.3}=3\sqrt{3}$ 2) $\sqrt{50}=\sqrt{5^2.2}=5\sqrt{2}$ 3) $\sqrt{150}=\sqrt{5^2.6}=5\sqrt{6}$

4) $\sqrt{200}=\sqrt{10^2.2}=10\sqrt{2}$ 5) $\sqrt{1,6}=\sqrt{\frac{16}{10}}=\frac{\sqrt{4^2}}{\sqrt{10}}=\frac{4.\sqrt{10}}{\sqrt{10}.\sqrt{10}}\frac{4\sqrt{10}}{10}=\frac{2\sqrt{10}}{5}(=0,4\sqrt{10})$

6) $\sqrt{0,45}=\sqrt{\frac{45}{100}}=\frac{\sqrt{3^2.5}}{\sqrt{10^2}}=\frac{3\sqrt{5}}{10}$ 7) $\sqrt{\frac{48}{49}}=\frac{\sqrt{2^2.2^2.3}}{\sqrt{7^2}}=\frac{4\sqrt{3}}{7}$ 8) $\sqrt{\frac{72}{7}}=\frac{\sqrt{6^2.2}.\sqrt{7}}{\sqrt{7}.\sqrt{7}}=\frac{6\sqrt{14}}{7}$

3) Effectue et simplifie :

1) $\sqrt{3}.\sqrt{3}.\sqrt{21}=3\sqrt{21}$ 3) $3\sqrt{3}.2\sqrt{3}.4\sqrt{2}=24.3\sqrt{2}=72\sqrt{2}$

2) $\sqrt{2}.\sqrt{12}.\sqrt{18}=\sqrt{2.2^2.3.3^2.2}=2.2.3\sqrt{3}=12\sqrt{3}$ 4) $\sqrt{2}.\left(-3\sqrt{20}\right)=-3\sqrt{2.2^2.5}=-3.2\sqrt{10}=-6\sqrt{10}$

4) Effectue et simplifie :

1) $\sqrt{50}-\sqrt{18}=\sqrt{5^2.2}-\sqrt{3^2.2}=5\sqrt{2}-3\sqrt{2}=2\sqrt{2}$

2) $\sqrt{40}-\sqrt{160}+3\sqrt{90}=\sqrt{2^2.10}-\sqrt{4^2.10}+3\sqrt{3^2.10}=2\sqrt{10}-4\sqrt{10}+3.3\sqrt{10}=-2\sqrt{10}+9\sqrt{10}=7\sqrt{10}$

3) $\sqrt{2}\cdot\left(\sqrt{3}+\sqrt{5}\right)=\sqrt{2}.\sqrt{3}+\sqrt{2}.\sqrt{5}=\sqrt{6}+\sqrt{10}$

4) $\left(-\sqrt{3}\right)\cdot\left(\sqrt{7}-1\right)=-\sqrt{3}.\sqrt{7}-\left(-\sqrt{3}\right)1=-\sqrt{21}+\sqrt{3}$

5) $\left(-2\sqrt{3}\right)\cdot\left(\sqrt{3}-\sqrt{5}\right)=-2\sqrt{3}.\sqrt{3}-\left(-2\sqrt{3}\right).\sqrt{5}=-2.3+2\sqrt{3.5}=-6+2\sqrt{15}$

6) $\sqrt{45}+\sqrt{112}-\sqrt{20}-\sqrt{28}=\sqrt{3^2.5}+\sqrt{2^2.2^2.7}-\sqrt{2^2.5}-\sqrt{2^2.7}=3\sqrt{5}+4\sqrt{7}-2\sqrt{5}-2\sqrt{7}=\sqrt{5}+2\sqrt{7}$

7) $\sqrt{500}+\sqrt{75}+\sqrt{80}-\sqrt{125}=\sqrt{10^2.5}+\sqrt{5^2.3}+\sqrt{2^2.2^2.5}-\sqrt{5^2.5}=10\sqrt{5}+5\sqrt{3}+4\sqrt{5}-5\sqrt{5}=9\sqrt{5}+5\sqrt{3}$

8) $\left(\sqrt{2}+\sqrt{3}\right)\cdot\left(\sqrt{3}-3\sqrt{2}\right)=\sqrt{2}.\sqrt{3}-\sqrt{2}.3\sqrt{2}+\sqrt{3}.\sqrt{3}-\sqrt{3}.3\sqrt{2}=\sqrt{6}-6+3-3\sqrt{6}=-2\sqrt{6}-3$

9) $\left(\sqrt{3}-\sqrt{2}\right)^2=\left(\sqrt{3}\right)^2-2.\sqrt{3}.\sqrt{2}+\left(\sqrt{2}\right)^2=3-2\sqrt{6}+2=5-2\sqrt{6}$

10) $\left(\sqrt{5}-\sqrt{7}\right)\cdot\left(\sqrt{5}+\sqrt{7}\right)=\left(\sqrt{5}\right)^2-\left(\sqrt{7}\right)^2=5-7=-2$