Ex 1 : 1) $\sqrt{49} = -7$; $\sqrt{(-5)^2} = 5$; $-(\sqrt{36})^2 = -36$

2) $\frac{\sqrt{2}}{\sqrt{8}} = \frac{\sqrt{2}}{\sqrt{4\times 2}} = \frac{\sqrt{2}}{\sqrt{4}\times\sqrt{2}} = \frac{1}{\sqrt{4}} = \frac{1}{2}$

$\sqrt{\frac{50}{18}} = \sqrt{\frac{25\times 2}{9\times 2}} = \sqrt{\frac{25}{9}} = \frac{5}{3}$

3) $\sqrt{45} = \sqrt{9\times 5} = 3\sqrt{5}$ $\quad \sqrt{200} = \sqrt{100\times 2} = 10\sqrt{2}$

Ex 2 : $A = 2\sqrt{27} - 2\sqrt{3} + \sqrt{12}$

1) $= 2\sqrt{9\times 3} - 2\sqrt{3} + \sqrt{4\times 3}$

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

$= 6\sqrt{3}$

$B = \sqrt{75} + \sqrt{48} - 7\sqrt{3}$

$= \sqrt{25\times 3} + \sqrt{16\times 3} - 7\sqrt{3}$

$= 5\sqrt{3} + 4\sqrt{3} - 7\sqrt{3}$

$= 2\sqrt{3}$

2) $\frac{A}{B} = \frac{6\sqrt{3}}{2\sqrt{3}} = \frac{6}{2} = 3$

Ex 3 : $A = (5\sqrt{2} - 3)(5\sqrt{2} + 7)$

$= (5\sqrt{2})^2 + 35\sqrt{2} - 15\sqrt{2} - 21$

$= 50 + 20\sqrt{2} - 21$

$= \boxed{31 + 20\sqrt{2}}$

$B = (1 - 3\sqrt{5})^2$

$= 1 - 2\times 3\sqrt{5} + (3\sqrt{5})^2$

$= 1 - 6\sqrt{5} + 45$

$= \boxed{46 - 6\sqrt{5}}$

Ex 4 : 1) $5x^2 = 20$

$x^2 = 4$

$x = 2$ ou $x = -2$

$S = \{-2 ; 2\}$

2) $-2x^2 = 0$

$x^2 = 0$

$x = 0$

$S = \{0\}$

3) $(x-2)^2 = 9$

$\begin{cases} x - 2 = 3 \\ \text{ou} \\ x - 2 = -3 \end{cases}$

$\begin{cases} x = 5 \\ \text{ou} \\ x = -1 \end{cases}$

$S = \{-1 ; 5\}$

Ex 5 : $(x+1)^2 = 8$

$x + 1 = \sqrt{8}$

$x = \sqrt{8} - 1$

$\boxed{x = 2\sqrt{2} - 1 \text{ cm}}$

$x + 1$ parce que c'est une longueur