Ex 1 :

A : 1. $\leadsto x$ 2. $\leadsto -2x$ 3. $-2x + 13$

B : 1. $\leadsto x$ 2. $\leadsto x - 7$ 3. $3(x-7)$

1) $-2 \times 2 + 13 = -4 + 13 = 9 \Rightarrow \underline{\text{Vrai}}$

2) $3(x-7) = 9 \iff x - 7 = 3 \iff x = 10$

3) $-2x + 13 = 3(x-7)$

$-2x + 13 = 3x - 21$

$-2x - 3x = -21 - 13$

$\qquad -5x = -34 \iff x = \dfrac{-34}{-5} = \dfrac{34}{5}$

Ex 2 :

1) Le 30% de 54 € est

$$\frac{30}{100} \bigg| \overset{\frown}{} \quad 54 \times \frac{30}{100} = 54 \times 0{,}3 = 16{,}2 \text{ €}$$

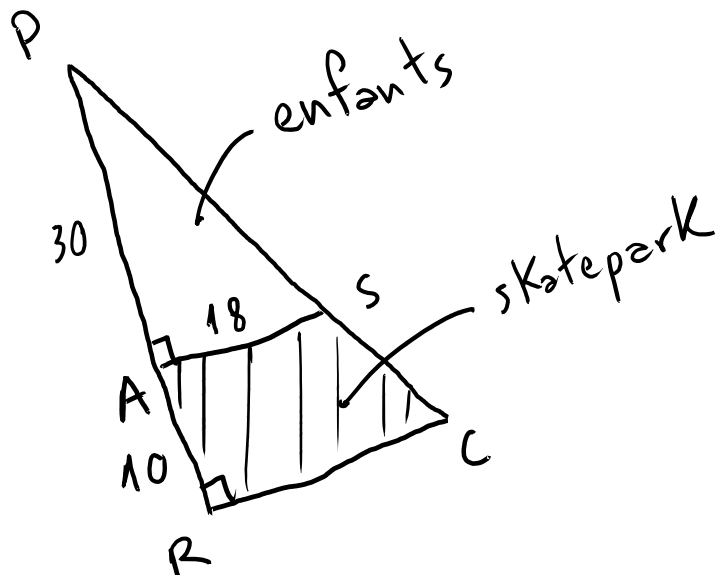Prix après réduction = $54 - 16{,}2 = 37{,}8$ €

2) a) $B2 = B1 \times 0{,}3$

    b) $B3 = B1 - B2$

3) Prix initial = x

$\qquad x - 0{,}3x = 42$

$\qquad 0{,}7x = 42 \qquad x = \dfrac{42}{0{,}7} = 60$ €

Ex 3 :

1) 1 sac $\rightsquigarrow$ 5 Kg $\rightsquigarrow$ 13,90 € $\rightsquigarrow$ 140 m²

$$A_{PAS} = \frac{30 \times 18}{2} = 270 \text{ m}^2$$

$$\frac{270}{140} \Big| \frac{\cdot}{5} \longrightarrow \frac{270 \times 5}{140} = 9,6 \text{ Kg} \Rightarrow 2 \text{ sacs}$$

$$\Rightarrow \text{Budget} = 2 \times 13,90 = 27,80 \text{ €}$$

2) $$A_{ARCS} = A_{PRC} - A_{PAS}$$

$$A_{PAS} = 270 \text{ m}^2 \qquad A_{PRC} = \frac{RC \times PR}{2} = \frac{40 \times RC}{2}$$

Les triangles PAS et PRC sont semblables, car :

- $\hat{A} = \hat{R} = 90°$, donc AS // RC

- $\hat{P}$ est en commun

- $\hat{S} = \hat{C}$ car ils sont correspondants

Thalès: $\dfrac{RC}{AS} = \dfrac{PR}{PA} = \dfrac{PC}{PS}$

$\Rightarrow \dfrac{RC}{18} = \dfrac{40}{30} \Rightarrow RC = \dfrac{40}{30} \times 18 = 24$

Donc $A_{PRS} = \dfrac{40 \times 24}{2} = 480 \ m^2$

Alors: $A_{ARCS} = 480 - 270 = 210 \ m^2$

<u>Ex 4</u>: 1) a) 5 m   b) 8h

2) $C = \dfrac{7,4 - 4,2}{3,1} \times 100 = 103$

<u>Ex 5</u>: 1) $3,2^2 + 2,4^2 = 16 = 4^2$

Donc $IK^2 + KJ^2 = IJ^2$

Alors IKJ est rectangle en K.

2) Les triangles IKJ et ILM sont semblables.

$\Rightarrow$ Thalès: $\dfrac{LM}{KJ} = \dfrac{LI}{KI} \Rightarrow LM = \dfrac{LI}{KI} \times KJ$

$\Rightarrow LM = \dfrac{(3,2+1,8)}{3,2} \times 2,4 = \dfrac{5 \times 2,4}{3,2} = 3,75$

3) $KM = \sqrt{1,8^2 + 3,75^2} = 4,16$