Corrigé

Omnimaths 11

pages 161-162

69. a) $0 = -5t^2 + 9t + 2$

b) $\frac{0}{-1} = \frac{-5t^2 + 9t + 2}{-1}$

$0 = 5t^2 - 9t - 2$

$0 = 5t^2 - 10t + t - 2$

$0 = 5t(t-2) + 1(t-2)$

$0 = (t-2)(5t+1)$

$t = 2$ $\quad$ ~~$t = -\frac{1}{5}$~~

73. $x$ : 1er nombre pair

$x+2$ : 2e " "

$x(x+2) = 288$

$x^2 + 2x - 288 = 0$

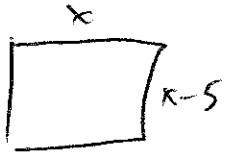
$(x+18)(x-16) = 0$

$x = -18$ $\quad$ $x = 16$

~~$x+2 = 16$~~ $\quad$ $x+2 = 18$

-18 et -16 ou 16 et 18

75.




$x(x-5) = 36$

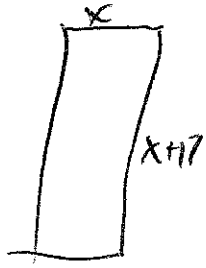
$x^2 - 5x - 36 = 0$

$(x-9)(x+4) = 0$

$x = 9$ $\quad$ ~~$x = -4$~~

9cm sur 4cm.

78.




$x(x+17) = 18$

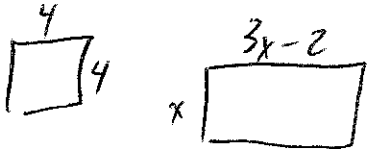
$x^2 + 17x - 18 = 0$

$(x+18)(x-1) = 0$

~~$x = -18$~~ $\quad$ $x = 1$

1m sur 18m.

80.




$x(3x-2) = 4^2$

$3x^2 - 2x - 16 = 0$

$3x^2 - 8x + 6x - 16 = 0$

$x(3x-8) + 2(3x-8) = 0$

$(3x-8)(x+2) = 0$

$x = 8/3$ $\quad$ ~~$x = -2$~~

$3(8/3) - 2 = 6$

$8/3$ m sur 6m.

70. $x$ : 1er nombre

$y$ : 2e nombre

$y - x = 6 \rightarrow y = x + 6$

$x^2 + y^2 = 146$

$x^2 + (x+6)^2 = 146$

$x^2 + x^2 + 12x + 36 - 146 = 0$

$2x^2 + 12x - 110 = 0$

$x^2 + 6x - 55 = 0$

$(x+11)(x-5) = 0$

$x = -11$ $\quad$ $x = 5$

$x = -5$ $\quad$ $y = 11$

-11 et -5 ou 5 et 11

82. $\frac{n(n-3)}{2} = 44$

$n^2 - 3n = 88$

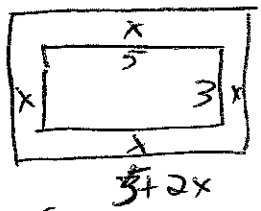
$n^2 - 3n - 88 = 0$

$(n-11)(n+8) = 0$

$n = 11$ ~~$n = -8$~~

11 côtés.

84.




$(5+2x)(3+2x) = 24$

$15 + 10x + 6x + 4x^2 - 24 = 0$

$4x^2 + 16x - 9 = 0$

$4x^2 - 2x + 18x - 9 = 0$

$2x(2x-1) + 9(2x-1) = 0$

$(2x-1)(2x+9)$

$x = 1/2$ ~~$x = -9/2$~~

1/2 m

p. 166-167

72. x : le nombre

$\frac{3x^2}{3} = \frac{432}{3}$

$\sqrt{x^2} = \sqrt{144}$

$x = \pm 12$

73. x : le nombre

$x^2 + 18 = 43$

$x^2 = 25$

$x = \pm 5$

75.

$h = -4,9t^2 + 196$

$0 = -4,9t^2 + 196$

a) $\frac{+4,9t^2}{4.9} = \frac{196}{4.9}$

$t^2 = \frac{196 \times 10}{49 \times 10}$

$\sqrt{t^2} = \sqrt{\frac{1960}{49}}$

$t = \frac{\sqrt{1960}}{7}$

$1960 = 49 \times 40$
$= 49 \times 4 \times 10$
$= 196 \times 10$

$t = \frac{\sqrt{196} \times \sqrt{10}}{7}$

$t = \frac{14\sqrt{10}}{7}$

$t = 2\sqrt{10}$ s

b) $\sqrt{t^2} = \sqrt{\frac{196}{4.9}}$

$t = 6,32$ s

82. x : le nombre

$\frac{x^2}{2}^{\times 10} + \frac{x^2}{5}^{\times 10} = 10^{\times 10}$

$5x^2 + 2x^2 = 100$

$7x^2 = 100$

a) $\sqrt{x^2} = \pm\sqrt{\frac{100}{7}}$

$x = \pm \frac{10}{\sqrt{7}} \times \frac{\sqrt{7}}{\sqrt{7}}$

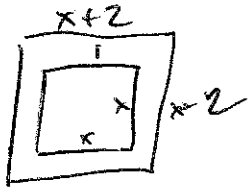
$x = \pm \frac{10\sqrt{7}}{7}$

b) $x^2 = \frac{100}{7}$

$\sqrt{x^2} = \pm\sqrt{\frac{100}{7}}$

$x = \pm 1,20$

07




$(x+2)^2 = 169$

$x+2 = \pm 13$

$x = -2 \pm 13$

$x = \cancel{15}$ $x = 11$ a.