

ex.1 求方程解

1) $x^2 - 2x = 1599$

$\Rightarrow (x-1)^2 = 1600$

$\Rightarrow x = 1 \pm 40$

$\Rightarrow x = 39 \vee 41 \#$

2) $x^2 - 7x + 5 = 0$

$\Rightarrow (x - \frac{7}{2})^2 = -5 + \frac{49}{4}$

$\Rightarrow x = \frac{7}{2} \pm \frac{\sqrt{9}}{2} \#$

3) $\frac{1}{2}x^2 - 3x - 4 = 0$

$\Rightarrow x^2 - 6x - 8 = 0$

$\Rightarrow (x-3)^2 = 17$

$\Rightarrow x = 3 \pm \sqrt{17} \#$

4) $4x^2 - 12x + 9 = 0$

$\Rightarrow (2x+3)^2 = 0$

$\Rightarrow x = -\frac{3}{2} \text{ (重)} \#$

5) $4x^2 - 5x + 2 = 0$

$\Rightarrow x^2 - \frac{5}{4}x + \frac{1}{2} = 0$

$\Rightarrow (x - \frac{5}{8})^2 = -\frac{1}{2} + \frac{25}{64}$

$\Rightarrow x = \frac{5}{8} \pm \sqrt{-\frac{17}{64}}$

$\Rightarrow x \text{ 在 } \mathbb{R} \text{ 中无解} \#$

6) $-x^2 + 70x - 1221 = 0$

$\Rightarrow (x-35)^2 = -1221 + 35^2$

$\Rightarrow x = 35 \pm 2$

$\Rightarrow x = 33 \vee 37 \#$