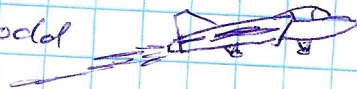


John Doe

5.6

1-23 odd



①

$$8x^2 + 18x - 5 = 0$$

~~$$x = \frac{-18 \pm \sqrt{18^2 - 4 \cdot 8 \cdot (-5)}}{2 \cdot 8}$$~~

~~$$\frac{-18 \pm \sqrt{164}}{16} = \frac{-18 \pm 4\sqrt{41}}{16}$$~~

164  
↑  
441

~~$$\frac{-9 \pm 2\sqrt{41}}{8}$$~~

✍

$$8x^2 + 18x - 5 = 0$$

$$a = 8 \quad b = 18 \quad c = -5$$

$$x = \frac{-18 \pm \sqrt{18^2 - 4 \cdot 8 \cdot (-5)}}{2 \cdot 8}$$

$$\frac{1}{4}, \frac{-5}{2}$$

$$\frac{-18 \pm \sqrt{484}}{16} = \frac{-18 \pm 22}{16} = \frac{1}{4}, \frac{-40}{16} = \frac{-5}{2}$$

③

$$4x^2 + 4x + 1 = 0$$

$$a = 4, \quad b = 4 \quad c = 1$$

$$x = \frac{-4 \pm \sqrt{4^2 - 4 \cdot 4 \cdot 1}}{4 \cdot 2} = \frac{-4 \pm \sqrt{0}}{8} = \frac{-4}{8} = \frac{-1}{2}$$

⑤

$$2x^2 - 4x + 1 = 0$$

$$a = 2 \quad b = -4 \quad c = 1$$

$$\frac{4 \pm \sqrt{4^2 - 4 \cdot 2 \cdot 1}}{2 \cdot 2} = \frac{4 \pm \sqrt{8}}{4} = \frac{4 \pm 2\sqrt{2}}{4} = \frac{2 \pm \sqrt{2}}{2}$$

8  
↑  
24

⑦

$$x^2 + 3x + 8 = 5$$

$$x^2 + 3x + 13 = 0$$

~~$$x = \frac{-3 \pm \sqrt{9 - 4 \cdot 1 \cdot 13}}{2} = \frac{-3 \pm \sqrt{-43}}{2} = \frac{-3 \pm i\sqrt{43}}{2}$$~~

$$x^2 + 3x + 8 = 5$$

$$-5 - 5$$

$$x^2 + 3x + 3 = 0$$

$$a = 1 \quad b = 3 \quad c = 3$$

$$x = \frac{-3 \pm \sqrt{3^2 - 4 \cdot 1 \cdot 3}}{2 \cdot 1} = \frac{-3 \pm \sqrt{-3}}{2} = \frac{-3 \pm i\sqrt{3}}{2}$$

⑨  $50 = -16t^2 + 85t$   
 $-50 \quad -50$   
 ~~$-16t^2 + 85t - 50 = 0$~~   
 $a = -16 \quad b = 85 \quad c = -50$

$$\frac{-85 \pm \sqrt{85^2 - 4(-16)(-50)}}{2 \cdot (-16)} = \frac{-85 \pm \sqrt{4025}}{-32}$$

6.7    4.64

⑪  $D = b^2 - 4ac$  + 2 real 0 | real - no real = 2 imaginary  
 $8x^2 + 18x - 5 = 0$   
 $a = 8 \quad b = 18 \quad c = -5$   
 $18^2 - 4 \cdot 8 \cdot (-5)$

$484$     2 real

⑬  $2x^2 - 4x + 1 = 0$   
 $(-4)^2 - 4 \cdot 2 \cdot 1 = 8$     2 real

⑮  $-12x^2 + 5x + 2 = 0$   
 $a = -12 \quad b = 5 \quad c = 2$   
 $5^2 - 4 \cdot (-12) \cdot 2$

$121$     2 real  
 $\frac{-5 \pm \sqrt{121}}{2 \cdot (-12)} = \frac{-5 \pm 11}{-24} = \left\{ -\frac{1}{4}, \frac{2}{3} \right\}$

⑰  $9x^2 - 6x - 4 = -5$   
 $+5 + 5$   
 $9x^2 - 6x + 1 = 0$

~~$a = 9 \quad b = -6 \quad c = 1$~~

~~$6^2 - 4 \cdot 9 \cdot 1 = 36 - 36 = 0$~~     2 real

~~$\frac{6 \pm \sqrt{0}}{2 \cdot 9} = \frac{6 \pm 0}{18} = \frac{1}{3}$~~

$a = 9 \quad b = -6 \quad c = 1$

$(-6)^2 - 4 \cdot 9 \cdot 1 = 0$

$\frac{+6 \pm \sqrt{0}}{2 \cdot 9} = \frac{+6}{18} = \frac{+1}{3}$     1 real

$72$   
 $\wedge$   
 $36 \cdot 2$

⑲  $x^2 + 3x - 3 = 0$   
 $a = 1 \quad b = 3 \quad c = -3$   
 $3^2 - 4 \cdot 1 \cdot (-3)$

$9 + 12 = 21$     2 real

$\frac{-3 \pm \sqrt{21}}{2}$

21

$$x^2 - 4x + 3 = 4$$

$$-4 - 4$$

$$x^2 + 4x - 1 = 0$$

$$a=1 \quad b=4 \quad c=-1$$

$$4^2 - 4 \cdot 1 \cdot (-1) = 20 \quad \boxed{2 \text{ real}}$$

20  
↑  
45

$$\frac{-4 \pm \sqrt{20}}{2 \cancel{1}} = \frac{-4 \pm 2\sqrt{5}}{2} = \boxed{-2 \pm \sqrt{5}}$$

23

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

$$a=1 \quad b=-2 \quad c=5$$

$$(-2)^2 - 4 \cdot 1 \cdot 5 = 4 - 20 = -16$$

$\boxed{2 \text{ imaginary}}$

$$\frac{+2 \pm \sqrt{-16}}{2 \cdot 1} = \frac{2 \pm 4i}{2} = \boxed{1 \pm 2i}$$