

Given

① $K = 273 + C$; $K = 10^\circ K$

$\Rightarrow C = K - 273$

From $C = \frac{5}{9}(F - 32)$

$\Rightarrow 10 - 273 = \frac{5}{9}(F - 32)$

$\Rightarrow -52.6 = \frac{5}{9}(F - 32)$

$\Rightarrow -52.6 \cdot 9 = 5(F - 32)$

$\Rightarrow F - 32 = -52.6 \cdot 1.8$

$\Rightarrow F - 32 = -94.68$

$\Rightarrow F = -94.68 + 32$

② $L \cdot F \cdot P = 3^\circ \rightarrow 0^\circ C$

$U \cdot F \cdot P = 102^\circ \rightarrow 100^\circ C$

$C = 80^\circ$; $C = 3$

$\frac{C - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P} = \frac{C - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P}$

$\Rightarrow \frac{C - 0}{100 - 0} = \frac{80 - 3}{102 - 3}$

$\Rightarrow \frac{C}{100} = \frac{77}{99}$

$\Rightarrow C = 77.77^\circ C$

③ $F = 2^\circ C$

$C = \frac{5}{9}(F - 32)$

$\Rightarrow \frac{F}{2} = \frac{5}{9}(F - 32)$

$\Rightarrow 9F = 10F - 320$

$\Rightarrow F = 320^\circ F$

④ $C = 60^\circ$

$F = 141^\circ F$

$C = \frac{5}{9}(F - 32)$

$\Rightarrow 60 = \frac{5}{9}(F - 32)$

$\Rightarrow F = 140^\circ F$

Error $\Delta = 1^\circ F$

⑤ $C = F$

$C = \frac{5}{9}(F - 32)$

$9C = 5(C - 32)$

$\Rightarrow 9C = 5C - 160$

$\Rightarrow 4C = -160$

$\Rightarrow C = -40^\circ C$

⑥ $L \cdot F \cdot P = 20$

$U \cdot F \cdot P = 80$

$X = 32$

$\frac{C - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P} = \frac{X - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P}$

$\Rightarrow \frac{C - 0}{100 - 0} = \frac{32 - 20}{80 - 20}$

$\Rightarrow \frac{C}{100} = \frac{12}{60}$

$\Rightarrow C = \frac{100 \cdot 12}{60} = 20^\circ C$

⑦ $U \cdot F \cdot P = 92^\circ$; $U \cdot F \cdot P = 100^\circ C$

$L \cdot F \cdot P = 2^\circ C$

$L \cdot F \cdot P = 0^\circ C$

$\frac{C - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P} = \frac{R - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P}$

$\Rightarrow \frac{C - 2}{92 - 2} = \frac{C - 0}{100 - 0}$

$\Rightarrow \frac{C - 2}{90} = \frac{C}{100}$

$\Rightarrow 100(C - 2) = 9C$

$\Rightarrow 100C - 200 = 9C$

$\Rightarrow C = 20^\circ C$

⑧ Given $C = 44^\circ$

$C = \frac{5}{9}(F - 32)$

$\Rightarrow C = \frac{5}{9}(113 - 32)$

$\Rightarrow C = 45^\circ$

Error $= 1^\circ C$

⑨ x scale

$L \cdot F \cdot P = 40^\circ$

$U \cdot F \cdot P = 120^\circ$

$X = 50$

$\frac{Y - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P} = \frac{X - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P}$

$\Rightarrow \frac{Y - 40}{120 - 40} = \frac{50 - 40}{120 - 40}$

$\Rightarrow \frac{Y + 30}{160} = \frac{10}{80}$

y scale

$L \cdot F \cdot P = -30^\circ$

$U \cdot F \cdot P = 130^\circ$

$Y = ?$

$\frac{Y - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P} = \frac{X - L \cdot F \cdot P}{U \cdot F \cdot P - L \cdot F \cdot P}$

$\Rightarrow \frac{Y + 30}{120 - 40} = \frac{50 - 40}{120 - 40}$

$\Rightarrow Y + 30 = 20$

$\Rightarrow Y = -10^\circ C$

Given $K = F$

⑩ $C = \frac{5}{9}(F - 32)$

$K - 273 = \frac{5}{9}(F - 32)$

$\Rightarrow F - 273 = \frac{5}{9}(F - 32)$

$\Rightarrow 9(F - 273) = 5(F - 32)$

$4F = 2451 - 160$

$\Rightarrow F = 572.25^\circ F$



$$(17) L = 5^\circ, \quad x = 59^\circ \\ U = 95^\circ, \quad c = ?$$

$$\frac{C-L}{U-L} = \frac{x-L}{U-L}$$

$$\Rightarrow \frac{C-5}{100-5} = \frac{59-5}{95-5}$$

$$\Rightarrow \frac{C}{100} = \frac{54}{90}$$

$$\Rightarrow C = 60^\circ C$$

$$(18) k = 273 + C$$

$$C = k - 273 \\ = 200 - 273 \\ = -73^\circ C$$

$$(19) k = 273 + C \\ = 273 + 37 \\ = 310 K$$

$$(20) F = 100^\circ F$$

$$\frac{R}{4} = \frac{F-32}{9}$$

$$\Rightarrow \frac{R}{4} = \frac{100-32}{9}$$

$$\Rightarrow \frac{R}{4} = \frac{68}{9}$$

$$\Rightarrow R = 30.2^\circ R$$

$$(21) C = 100^\circ C$$

$$\frac{R}{4} = \frac{C}{5}$$

$$\frac{R}{4} = \frac{100}{5}$$

$$\frac{R}{4} = 20$$

$$R = 80^\circ R$$

LTask

C, B, D, D, A, B

$$(1) L.F.P = 5^\circ C \\ U.F.P = 85^\circ C$$

$$t = 49^\circ C$$

$$\frac{C-L}{U-L} = \frac{t-L}{U-L}$$

$$\Rightarrow \frac{C-5}{100-5} = \frac{49-5}{85-5}$$

$$\Rightarrow \frac{C}{100} = \frac{44}{80}$$

$$\Rightarrow C = 55^\circ C$$

$$(4) C = \frac{1}{10} F \Rightarrow F = 10C$$

$$C = \frac{5}{9} (F-32)$$

$$\Rightarrow C = \frac{5}{9} (10C-32)$$

$$\Rightarrow 9C = 5(10C-32)$$

$$\Rightarrow 9C = 50C - 160$$

$$\Rightarrow C = \frac{160}{41} = 3.9^\circ C$$

$$(8) F = 2C$$

$$\text{From } C = \frac{5}{9} (F-32)$$

$$\Rightarrow 9C = 5(2C-32)$$

$$\Rightarrow 9C = 10C - 160$$

$$\Rightarrow C = 160^\circ; \quad F = 320^\circ F$$

(2) ice point is at $0^\circ C$

but thermometer reads

it as $10^\circ C$.

in the place of $50^\circ \xrightarrow{\text{reads}} 60^\circ C$

so boiling point of water is $100^\circ C$

so the thermometer reads $110^\circ C$

$$(5) C = 80^\circ C, \quad F = 181^\circ F$$

$$C = \frac{5}{9} (F-32)$$

$$\Rightarrow 80 = \frac{5}{9} (F-32)$$

$$\Rightarrow 16 = \frac{1}{9} (F-32)$$

$$\Rightarrow 9 \times 16 = F-32$$

$$\Rightarrow F = 176$$

$$\Rightarrow \text{Error} = 5^\circ F$$

$$(6) k = 20 K \Rightarrow k = 273 + C \Rightarrow C = k - 273 \\ \Rightarrow C = -253^\circ C$$

$$C = \frac{5}{9} (F-32)$$

$$\Rightarrow -253 = \frac{5}{9} (F-32)$$

$$\Rightarrow -50.6 = \frac{1}{9} (F-32)$$

$$\Rightarrow F = -50.6 \times 9 + 32$$

$$\Rightarrow F = -423.4^\circ F$$

$$\Rightarrow C = 77.8^\circ C$$

$$(10) \text{ Given } k = 200 K. \quad (18) \text{ From Relation}$$

$$k = 273 + C$$

$$\Rightarrow C = +200 - 273$$

$$\Rightarrow C = -73^\circ C$$

$$\text{From } C = \frac{5}{9} (F-32)$$

$$\Rightarrow -14.6 = \frac{5}{9} (F-32)$$

$$\Rightarrow -14.6 \times 9 = 5F - 160$$

$$\Rightarrow F = -99.68^\circ F$$

... in K & F

$$(3) F = 3C \Rightarrow C = \frac{F}{3}$$

$$\Rightarrow C = \frac{5}{9} (F-32)$$

$$\Rightarrow \frac{F}{3} = \frac{5}{9} (F-32)$$

$$\Rightarrow F = \frac{5}{3} (F-32)$$

$$\Rightarrow 3F = 5(F-32)$$

$$\Rightarrow 3F = 5F - 160$$

$$\Rightarrow F = 80^\circ F$$

$$(7) \frac{C-L}{U-L} = \frac{t-L}{U-L}$$

$$\Rightarrow \frac{C}{100} = \frac{80-3}{102-3}$$

$$\Rightarrow \frac{C}{100} = \frac{77}{99}$$



①⑨

$$L = 6^{\circ}$$

$$U = 110^{\circ}$$

$$t = 60^{\circ}$$

$$\frac{t - L}{U - L} = \frac{C - L}{U - F}$$

$$\Rightarrow \frac{e}{100} = \frac{54}{104}$$

$$\Rightarrow \frac{60 - 6}{110 - 6} = \frac{C}{100}$$

$$\text{or } C = 51.75^{\circ}\text{C}$$