

3agata 1.

a) DEC \rightarrow BIN

$$98_{(10)} \rightarrow \begin{array}{cccccccc} 128 & 64 & 32 & 16 & 8 & 4 & 2 & 1 \\ 0 & 1 & 1 & 0 & 0 & 0 & 1 & 0 \end{array}$$

$$56_{(10)} \rightarrow \begin{array}{cccccccc} 128 & 64 & 32 & 16 & 8 & 4 & 2 & 1 \\ 0 & 0 & 1 & 1 & 1 & 0 & 0 & 0 \end{array}$$

$$1000_{(10)} \rightarrow \begin{array}{cccccccccccccccc} 1024 & 512 & 256 & 128 & 64 & 32 & 16 & 8 & 4 & 2 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 0 & 0 & 1 & 0 & 0 & 0 \end{array}$$

$$14825_{(10)} \rightarrow \begin{array}{cccccccccccccccc} 8192 & 4096 & 2048 & 1024 & 512 & 256 & 128 & 64 & 32 & 16 & 8 & 4 & 2 & 1 \\ 0 & 0 & 1 & 1 & 1 & 0 & 0 & 1 & 1 & 1 & 1 & 0 & 1 & 0 & 0 & 1 \end{array}$$

b) BIN \rightarrow DEC

$$10_{(2)} \rightarrow \begin{array}{cc} 2 & 1 \\ 1 & 0 \end{array} \rightarrow 2 \cdot 1 + 1 \cdot 0 = 2_{(10)}$$

$$11101_{(2)} \rightarrow \begin{array}{ccccc} 16 & 8 & 4 & 2 & 1 \\ 1 & 1 & 1 & 0 & 1 \end{array} \rightarrow 16 + 8 + 4 + 1 = 29_{(10)}$$

$$1110111_{(2)} \rightarrow \begin{array}{ccccccc} 64 & 32 & 16 & 8 & 4 & 2 & 1 \\ 1 & 1 & 1 & 0 & 1 & 1 & 1 \end{array} \rightarrow 64 + 32 + 16 + 4 + 2 + 1 = 119_{(10)}$$

$$1010101010_{(2)} \rightarrow \begin{array}{cccccccc} 512 & 256 & 128 & 64 & 32 & 16 & 8 & 4 & 2 & 1 \\ 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 \end{array} \rightarrow 512 + 128 + 32 + 8 + 2 = 682_{(10)}$$

c) DEC \rightarrow HEX

$$48_{(10)} \rightarrow \begin{array}{l} 48 : 16 \\ 3 : 16 \end{array} \begin{array}{l} \text{oct.} \\ 0 \\ 3 \end{array} \rightarrow 30_{(16)}$$

$$156_{(10)} \rightarrow \begin{array}{l} 156 : 16 \\ 9 : 16 \end{array} \begin{array}{l} \text{oct.} \\ 12 \\ 9 \end{array} \rightarrow 9C_{(16)}$$

$$1024_{(10)} \rightarrow \begin{array}{l} 1024 : 16 \\ 64 : 16 \\ 4 : 16 \end{array} \begin{array}{l} \text{oct.} \\ 0 \\ 0 \\ 4 \end{array} \rightarrow 400_{(16)}$$

$$2020_{(10)} \rightarrow \begin{array}{l} 2020 : 16 \\ 126 : 16 \\ 7 : 16 \end{array} \begin{array}{l} \text{oct.} \\ 4 \\ 74 \\ 7 \end{array} \rightarrow 7E4$$

D) HEX \rightarrow DEC

$$A_{(16)} \rightarrow 10_{(10)}$$

$$100_{(16)} \rightarrow \overset{256}{1} \overset{16}{0} \overset{1}{0} \rightarrow 256 \cdot 1 + 16 \cdot 0 + 1 \cdot 0 = 256_{(10)}$$

$$ABC_{(16)} \rightarrow \overset{256}{A} \overset{16}{B} \overset{1}{C} \rightarrow 256 \cdot 10 + 16 \cdot 11 + 1 \cdot 12 = 2572 + 176 + 12 = 2748_{(10)}$$

$$5B3_{(16)} \rightarrow \overset{256}{5} \overset{16}{B} \overset{1}{3} \rightarrow 256 \cdot 5 + 16 \cdot 11 + 3 = 1280 + 176 + 3 = 1459_{(10)}$$

E) HEX \rightarrow BIN

$$B_{(16)} \rightarrow \begin{array}{|c|c|c|c|} \hline \overset{8}{1} & \overset{4}{1} & \overset{2}{0} & \overset{1}{0} \\ \hline \end{array}$$

$$200_{(16)} \rightarrow \begin{array}{|c|c|c|c|c|c|c|c|} \hline \overset{8}{0} & \overset{4}{0} & \overset{2}{1} & \overset{1}{0} & \overset{8}{0} & \overset{4}{0} & \overset{2}{0} & \overset{1}{0} \\ \hline \end{array}$$

2 0 0

$$1E A_{(16)} \rightarrow \begin{array}{|c|c|c|c|c|c|c|c|} \hline \overset{8}{0} & \overset{4}{0} & \overset{2}{0} & \overset{1}{1} & \overset{8}{1} & \overset{4}{1} & \overset{2}{1} & \overset{1}{0} \\ \hline \end{array}$$

1 E A

$$3A2D_{(16)} \rightarrow \begin{array}{|c|c|c|c|c|c|c|c|} \hline \overset{8}{0} & \overset{4}{0} & \overset{2}{1} & \overset{1}{1} & \overset{8}{1} & \overset{4}{0} & \overset{2}{1} & \overset{1}{0} \\ \hline \end{array}$$

3 A 2 D

F) BIN \rightarrow HEX

$$110_{(2)} \rightarrow \overset{4}{1} \overset{2}{1} \overset{1}{0} \rightarrow 6_{(16)}$$

$$1100101_{(2)} \rightarrow \overset{4}{1} \overset{2}{1} \overset{1}{0} \overset{1}{1} \rightarrow \overset{8}{0} \overset{4}{1} \overset{2}{0} \overset{1}{1} \rightarrow 65_{(16)}$$

6 5

$$101110110_{(2)} \rightarrow \overset{1}{1} \overset{0}{0} \overset{1}{1} \overset{1}{1} \overset{1}{1} \rightarrow \overset{8}{0} \overset{4}{1} \overset{2}{1} \overset{1}{0} \rightarrow 176_{(16)}$$

$$111101_{(2)} \rightarrow \overset{2}{1} \overset{1}{1} \overset{1}{1} \overset{1}{0} \overset{1}{1} \rightarrow \overset{8}{3} \overset{4}{D} \rightarrow 3D_{(16)}$$

G) DEC \rightarrow OCT

$$8_{(10)} \rightarrow \begin{array}{r} 8:8 \\ 1:8 \end{array} \begin{array}{r} \text{OCT} \\ 0 \\ 1 \end{array} \uparrow \rightarrow 10_{(8)}$$

$$56_{(10)} \rightarrow \begin{array}{r} 56:8 \\ 7:8 \end{array} \begin{array}{r} \text{OCT} \\ 0 \\ 7 \end{array} \rightarrow 70_{(8)}$$

$$1000_{(10)} \rightarrow \begin{array}{r} 1000:8 \\ 125:8 \\ 15:8 \\ 1:8 \end{array} \begin{array}{r} \text{OCT} \\ 0 \\ 5 \\ 7 \\ 1 \end{array} \rightarrow 1750_{(8)}$$

$$14825_{(10)} \rightarrow \begin{array}{r} 14825:8 \\ 1853:8 \\ 237:8 \\ 28:8 \\ 3:8 \end{array} \begin{array}{r} \text{OCT} \\ 7 \\ 5 \\ 7 \\ 4 \\ 3 \end{array} \rightarrow 34757_{(8)}$$

H) OCT \rightarrow DEC

$$25_{(8)} \rightarrow \begin{array}{r} 8 \\ 2 \end{array} \begin{array}{r} 1 \\ 5 \end{array} \rightarrow 8 \cdot 2 + 1 \cdot 5 = 21_{(10)}$$

$$10_{(8)} \rightarrow \begin{array}{r} 8 \\ 1 \end{array} \begin{array}{r} 0 \\ 0 \end{array} \rightarrow 8_{(10)}$$

$$627_{(8)} \rightarrow \begin{array}{r} 64 \\ 6 \end{array} \begin{array}{r} 8 \\ 2 \end{array} \begin{array}{r} 1 \\ 1 \end{array} \rightarrow 64 \cdot 6 + 8 \cdot 2 + 1 = 401_{(10)}$$

$$45_{(8)} \rightarrow \begin{array}{r} 8 \\ 4 \end{array} \begin{array}{r} 1 \\ 5 \end{array} \rightarrow 37_{(10)}$$

I) Тройка \rightarrow Десятичная БС

$$120_{(3)} \rightarrow \begin{array}{ccc} 9 & 3 & 1 \\ 1 & 2 & 0 \end{array} \rightarrow 15_{(10)} \rightarrow \begin{array}{l} 15:4 \\ \#3:4 \end{array} \begin{array}{c} \text{ост.} \\ 3 \\ 3 \end{array} \rightarrow 33_{(4)}$$

$$10_{(3)} \rightarrow \begin{array}{cc} 3 & 1 \\ 1 & 0 \end{array} \rightarrow 3_{(10)} \rightarrow 3:4 \begin{array}{c} \text{ост.} \\ 3 \end{array} \rightarrow 3_{(4)}$$

$$2110_{(3)} \rightarrow \begin{array}{cccc} 27 & 9 & 3 & 1 \\ 2 & 1 & 1 & 0 \end{array} \rightarrow 66_{(10)} \rightarrow \begin{array}{l} 66:4 \\ 16:4 \\ 4:4 \\ 1:4 \end{array} \begin{array}{c} \text{ост.} \\ 2 \\ 0 \\ 0 \\ 1 \end{array} \rightarrow 1002_{(4)}$$

$$110_{(3)} \rightarrow \begin{array}{ccc} 9 & 3 & 1 \\ 1 & 1 & 0 \end{array} \rightarrow 12_{(10)} \rightarrow \begin{array}{l} 12:4 \\ 3:4 \end{array} \begin{array}{c} \text{ост.} \\ 0 \\ 3 \end{array} \rightarrow 30_{(4)}$$