

$$1) 101010_2$$

$$1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 0 \times 2^0 \\ 32 + 0 + 8 + 0 + 2 + 0 \\ 42_{10}$$

$$101010_2 = 42_{10}$$

$$b) 1010_3$$

$$1 \times 3^3 + 0 \times 3^2 + 1 \times 3^1 + 0 \times 3^0 \\ 27 + 0 + 3 + 0 \\ 30_{10}$$

$$1010_3 = 30_{10}$$

$$c) 1021_4$$

$$1 \times 4^3 + 0 \times 4^2 + 2 \times 4^1 + 1 \times 4^0 \\ 64 + 0 + 8 + 4 \\ 76_{10}$$

$$1021_4 = 76_{10}$$

$$d) 1025_6$$

$$1 \times 6^3 + 0 \times 6^2 + 2 \times 6^1 + 5 \times 6^0 \\ 216 + 0 + 12 + 5 \\ 233_{10}$$

$$1025_6 = 233_{10}$$

$$e) 2165_8$$

$$2 \times 8^3 + 1 \times 8^2 + 6 \times 8^1 + 5 \times 8^0 \\ 1024 + 64 + 48 + 5 \\ 1141_{10}$$

$$2165_8 = 1141_{10}$$

$$2) 12$$

$$12 \underline{2}$$

$$0 \ 36 \underline{2}$$

$$0 \ 18 \underline{2}$$

$$0 \ 9 \underline{2}$$

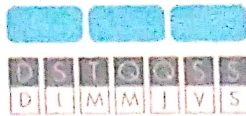
$$1 \ 4 \underline{2}$$

$$0 \ 2 \underline{2}$$

$$0 \ 1$$

$$12 = 1004000_2$$

$$12 = 1004000_2$$



b) 127

127 22

1 63 22

1 31 22

1 15 22

1111111 = 127
2 10

1 7 22

1 3 22

c) 35

1 1

35 22

1 17 22

1 8 22

0 4 22

100011 = 35
2 10

0 2 22

0 1

d) 23

23 22

1 11 22

1 5 22

10111 = 23
2 10

1 2 22

0 1

e) 165

165 22

1 82 22

0 41 22

1 20 22

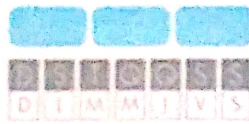
10100101 = 165
2 10

0 10 22

0 5 22

1 2 22

0 1



3) 567

56728

4 70 28

$$10 \underset{8}{6} \underset{7}{7} = 567_{10}$$

6 8 28
0 7

4) 987

98728

7 122 28

$$11 \underset{8}{2} \underset{7}{7} = 987_{10}$$

2 15 28
7 1

5) 4020

402028

4 727 28

$$11 \underset{8}{7} \underset{4}{4} = 4020_{10}$$

7 15 28
1 7

6) 65

6528

1 8 28

$$10 \underset{8}{1} = 65_{10}$$

0 7

7) 680

68028

0 85 28

$$12 \underset{8}{5} \underset{0}{0} = 680_{10}$$

5 10 28
2 7

a) 567

567 16

7 35 16

3 2

$$237_{16} = 567_{10}$$

b) 983

983 16

7 61 16

73 3

$$3D7_{16} = 983_{10}$$

c) 1020

1020 16

12 63 16

15 3

$$3FC_{16} = 1020_{10}$$

d) 65

65 16

1 4

$$41_{16} = 65_{10}$$

e) 680

680 16

8 42 16

10 2

$$2A8_{16} = 680_{10}$$

5) a) FS

F S

$$FS_{16} = 365_8$$

011 110 101
3 6 5

b)

AB7

A B 7

$$AB7_{16} = 5267_8$$

1010 1011 0111

5 2 6 7

c) 98A

9 8 A

$$98A_{16} = 9672_{10}$$

1001 1000 1010
4 6 1 2

d) F1E2

F 1 E 2

$$F1E2_{16} = 770792_8$$

001111 00011110 0010
1 7 0 7 4 2

e) E229

E 2 2 9

$$E229_{16} = 161057_8$$

001110 00100010 1001
1 6 1 0 5 7