Page 1

#5 35 80 00 00 → 0011 0101 1000 0000 0000 0000 0000 0000

regroup: 0 | 0110 1011 | 000 (20+ zeros)
s | e | f

s = 0

e = 6B hex
= 107 dec

expression: $1.0 \times 2^{107-127}$

binary scientific = 1.0×2^{-20}

#6 binary scientific → $-1.1111 \times 2^{(110)}$, s = 1

s | e | f

110 = e − 127

e = 237 dec

14 13 (DE hex)

regroup = 1 1110 1101 1111 (+19 0's)

= 1111 0110 1111 1000 0000 0000 0000 0

= F 6 F 8 0 0 0 0

hex = F6 F8 00 00

#11 binary scientific → -1.11×2^{-195}

s | e | f

s = 1

−195 = e − 1023

e = 828 dec

12

51

3 3

(33C) hex

regroup: 1 011 0011 1100 1100 (+48 0's)

= 1011 0011 1100 1100 (+ 48 zeros)

= B 3 C C 00 00 00 00 00 00

hex = B3 CC 00 00 00 00 00 00

#16 UTF-16

7E < 7F

Codepoint = U+007E

UTF-16 = 00 7E

UTF-32 = 0000007E

#17 UTF-32 = 000000CF

UTF-16 = 00 CF

codepoint = U+00CF

#18 UTF-8 = CE 9A

= 1100 1110 1001 1010

= 110 011 10 10 01 1010

= 0000 0011 1001 1010

= 0 3 9 A

Codepoint = U+039A

UTA-32 = 0000039A

UTA-16 = 03 9A

#19 Codepoint U+2284 = 0010 0010 1011 0100

= 1110 0010 10 0010 10 10 11 0100

= 1110 0010 1000 1010 1011 0100

UTA-8 = E 2 8 A B 4

#20 U+0063 < U+007F

∴ UTF-8 = 63

Latin Small Letter C

"C" = character

(via web search)

#21 UTF-8 = F0 9F B2 BF

= 1111 0000 1001 1111 1000 0010 1000 1111

= 11110 000 10 011111 10 000010 10 001111

0 0001 1111 0000 1000 1111

Codepoint = U+ 1 F 0 B F

UTF-32 = 0001F0BF

U+1F0BF

− 10 000

0F0BF = 0000 1111 0000 1000 1111

= 110110 0000 1111 00 110111 00 1000 1111

= 1101 1000 0011 1100 1101 1100 1000 1111

UTF-16 = D 8 3 C D C 8 F

#22 UTF-16 = D83D DE37

= 1101 1000 0011 1101 1101 1110 0011 0111

= 110110 0000 1111 01 110111 1000 1101 11

= 0000 1111 0110 0011 0111

\+ 0 F 6 3 7

1 0 0 0 0

Codepoint = U+1 F 6 3 7

Character (via web search) = Face with medical mask

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#23 UTF-8 =

F0 9F 80 A7

= 1111 0000 1001 1111 1000 0000 1010 0111

11110 000 10 01 1111 10 00 0000 10 10 0111

0 0001 1111 0000 0010 0111

unicode = U+ 1 F 0 2 7

UTF-32 = 0001F027

#24 U+1F612 → 0001 1111 0110 0001 0010

11110 000 10 01 1111 10 0110 00 10 01 0010

1111 0000 1001 1111 1001 1000 1001 0010

UTF-8 = F 0 | 9 F | 9 8 | 9 2

Character (via web search) = Unamused Face

#25 UTF-8 = E2 BB A5

= 1110 0010 1000 1011 1010 0101

= 1110 0010 10 00 1011 10 10 0101

= 0010 0010 1110 0101

unicode = U+ 2 2 E 5

UTF-16 = 22 E5

#37 assembly instruction = DIV lookup
↓ ↓
7 2063E6
machine instruction = 702063E6

#38 assembly instruction = JZ lookup
↓ ↓
D 2063E6
machine instruction = D02063E6

#39 machine instruction = 2F00E877
↓ ↓
assembly instruction = IN gpu

#40 machine instruction = D02063E6
↓ ↓
assembly instruction = JZ lookup

#36 assembly instruction = JUMP counter
↓ ↓
C C3A
machine instruction = C0000C3A