

①

What decimal number is represented by the IEEE 32 BIT FLOATING POINT FORMAT number

$e2964000_{16}$

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
1100 0010 1001 0110 0100 0000 0000 0000

1100 0010 1001 0110 0100 0000 0000 0000

↓

↕

↓

MANTISSA

—
SIGN

EXPONENT

001 011 001

put 1. ~~back~~ BACK INTO MANTISSA

1.001 011 001

EXPONENTS : SUBTRACT 127 FROM IT

10000101

1 1 1

$$(128) + (4) + (1) = 133 - 127 = 6$$

$$- 1.001011001 \times 2^6$$

MOVE FORWARD 6 PLACES

$$- 1001011.001$$

(2)

- 1001011.001

$$\begin{array}{c} | \quad | \quad | \quad | \quad | \\ \textcircled{64} + \textcircled{8} + \textcircled{2} + \textcircled{1} + 0.125 = -75.125 \end{array}$$

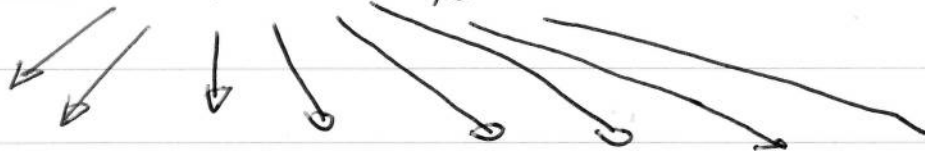
-75.125₁₀

EXERCISE 2

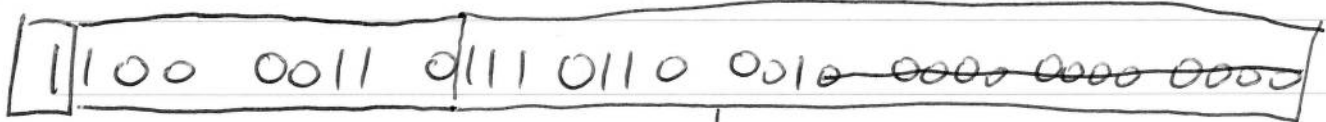
IEEE NO. ~~80~~

What decimal no. is represented by the 32 BIT

C3762000₁₆ ?



1100 0011 0111 0110 0010 0000 0000 0000



S

E

M

PUT 1. BACK INTO MANTISSA

1.1110110001

SUBTRACT 127 FROM EXPONENT

10000110

$$\begin{array}{c} | \quad | \\ \textcircled{128} + \textcircled{4} + \textcircled{2} = 134 - 127 = 7 \end{array}$$

③

$$- 1.1110110001 \times 2^7$$

MOVE • FORWARD 7 PLACES

- 1 1 1 0 1 0 0 0 1 ~~0~~ 2
 / / / / | | \
 128 64 32 16 (4) (2) 0.125

 ADD THESE UP

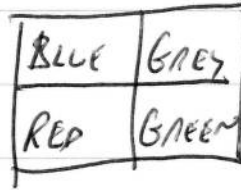
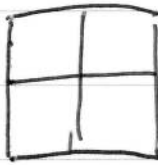
$$-246.125_{10}$$

24 BIT BIT MAP

RED,	GREEN,	BLUE
↓	↓	↓
24 BITS	24 BITS	24 BITS
↓	↓	↓
3 BYTES	3 BYTES	3 BYTES

(4)

PIXELS



	RED	GREEN	BLUE
BLUE	0	0	255
GREY	127	127	127
RED	255	0	0
GREEN	0	255	0

0-255

WE WILL OPEN UP THE FILE USING
A HEXADECIMAL EDITOR — FRHEP.EXE

BYTE 0, 1, 2, 3, 4, 5



SIZE OF FILE

BYTES

2 3 4 5
36 00 0F 00

00 0F 00 36

CONVERT TO DECIMAL

①

WRITE AN ASSEMBLY LANGUAGE PROGRAM
THAT WILL TAKE IN A SINGLE CHARACTER.

01h

IF THE CHARACTER IS LOWERCASE,
CONVERT IT TO UPPERCASE AND PRINT IT OUT

ASCII

A	41h	65d	a	61h	97d
B	42h	66d	b	62h	98d
:	:	:	:	:	:
z	5Ah	90d	Z	7Ah	122d

A / a	41h / 61h	65d / 97d
	20h	32d

SUBTRACT 20h → LOWERCASE TO

SUBTRACT 32 → "UPPERCASE"

EXERCISE 2

(2)

TAKE IN A CHARACTER.

IF ITS LOWERCASE, CONVERT IT TO UPPERCASE.

PRINT IT OUT EITHER WAY EG.

KEYED IN	↓	↓	OUTPUT
	A	A	
	a	A	
	z	Z	
	Z	Z	
	{	{	
	!	!	

EXERCISE 3

DO THE SAME AS FOR EXERCISE 2,
BUT TAKE IN 3 CHARACTERS

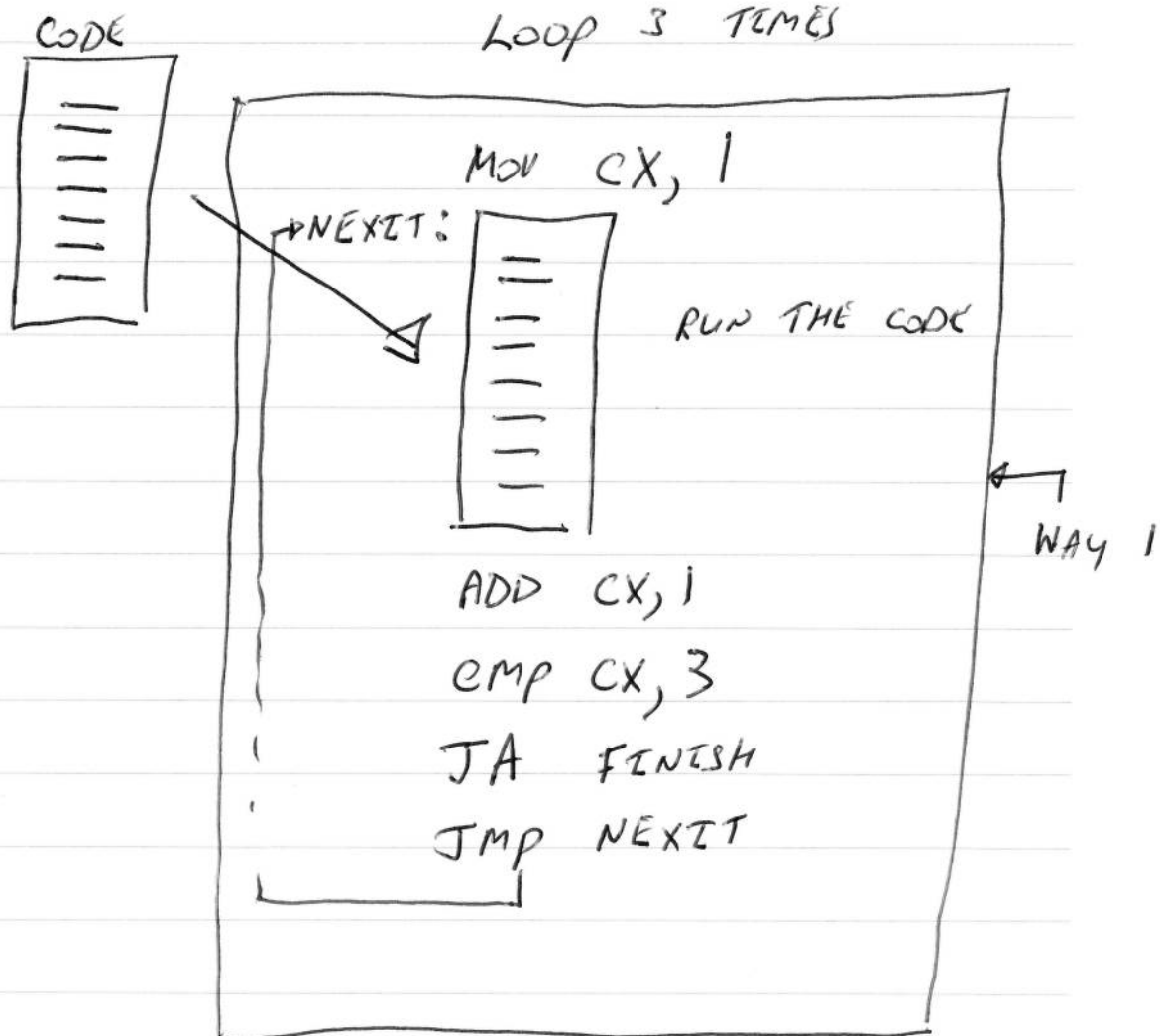
A	A	a	A	z	Z
!	!	A	A	e	E

③

once

AA --- (aA) (nN) (eE)

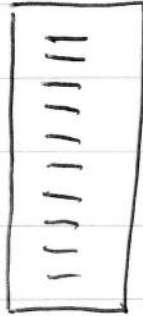
TAKÉ CODE FROM EXERCISE 2 AND
EXECUTE IT 3 TIMES. I.E. PUT A
LOOP AROUND IT.



④

MOV CX, 1

NEXT:



RUN THE CODE

ADD CX, 1

CMP CX, 3

JBE NEXT

AN

ALTERNATIVE
WAY