§1.C++的初步知识 – 进制转换习题

**【要求：】1、十进制转其它进制，必须列出竖式（含小数计算，Word排版，不允许手写拍照）**

**2、十进制转二进制小数，如积的小数部分不为0，至少要计算到二进制小数点后8位**

**3、其它进制转换，必须写清楚具体步骤（参考文档）**

**4、注意排版格式，上下标等设置等**

**5、可直接在本文档上完成作业**

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1. **十进制转二进制**

A.7063

**|**7063

2**|**3531···································1

　　 2**|**1765··································1

2**|**882··································1

2**|**441·································0

2**|**220································1

2**|**110·······························0

2**|**55·······························0

2**|**27······························1

2**|**13·····························1

2**|**6·····························1

2**|**3····························0

2**|**1···························1

2**|**0··························1

∴7063=(1,101,110,010,111)2

B.74655

**|**74655

2**|**37327···································1

　　 2**|**18663··································1

2**|**9331··································1

2**|**4665·································1

2**|**2332································1

2**|**1166·······························0

2**|**583·······························0

2**|**291······························1

2**|**145·····························1

2**|**72·····························1

2**|**36····························0

2**|**18···························0

2**|**9···························0

2**|**4··························1

2**|**2·························0

2**|**1························0

2**|**0·······················1

∴74655=(10,010,001,110,011,111)2

C.196607

**|**196607

2**|**98303···································1

　　 2**|**49151··································1

2**|**24575·································1

2**|**12287································1

2**|**6143································1

2**|**3071·······························1

2**|**1535······························1

2**|**767······························1

2**|**383·····························1

2**|**191····························1

2**|**95····························1

2**|**47···························1

2**|**23··························1

2**|**11·························1

2**|**5·························1

2**|**2························1

2**|**1·······················0

2**|**0······················1

∴196607=(101,111,111,111,111,111)2

D.0.0825

0.0825 2 = 0 + 0.165

0.165 2 = 0 + 0.33

0.33 2 = 0 + 0.66

0.66 2 = 1 + 0.32

0.32 2 = 0 + 0.64

0.64 2 = 1 + 0.28

0.28 2 = 0 + 0.56

0.56 2 = 1 + 0.12

……

∴0.0825=(0.00010101)2

E.15.0375

整数部分：

**|**15

2**|**7···································1

　　 2**|**3··································1

2**|**1·································1

2**|**0································1

小数部分：

0.0375 2 = 0 + 0.075

0.075 2 = 0 + 0.15

0.15 2 = 0 + 0.3

0.3 2 = 0 + 0.6

0.6 2 = 1 + 0.2

0.2 2 = 0 + 0.4

0.4 2 = 0 + 0.8

0.8 2 = 1 + 0.6

……

∴15.0375=(1111.00001001)2

F.1023.05

整数部分：

**|**1023

2**|**511···································1

　　 2**|**255··································1

2**|**127·································1

2**|**63·································1

2**|**31································1

2**|**15·······························1

2**|**7·······························1

2**|**3······························1

2**|**1·····························1

2**|**0····························1

小数部分：

0.05 2 = 0 + 0.1

0.1 2 = 0 + 0.2

0.2 2 = 0 + 0.4

0.4 2 = 0 + 0.8

0.8 2 = 1 + 0.6

0.6 2 = 1 + 0.2

0.2 2 = 0 + 0.4

0.4 2 = 0 + 0.8

……

∴1023.05=(1111111111.00001100)2

1. **二进制转十进制**

A.(1010101)2

=

=85

B.(1011110101101011)2

=

=48,491

C.(1111111111111)2

=

=8,191

D.(100.10101)2

=

=4.65625

E.(101101.111)2

=

=45.875

F.(0.10010111)2

=

=0.58984375

1. **十进制转八进制**

A.7063

**|**7063

8**|**882···································7

　　 8**|**110··································2

8**|**13··································6

8**|**1··································5

8**|**0·································1

∴7063=(15,627)8

B.74655

**|**74655

8**|**9331···································7

　　 8**|**1166··································3

8**|**145··································6

8**|**18··································1

8**|**2··································2

8**|**0·································2

∴74655=(221,637)8

C.196607

**|**196607

8**|**24575··································7

　　 8**|**3071··································7

8**|**383··································7

8**|**47··································7

8**|**5··································7

8**|**0·································5

∴196607=(577,777)8

1. **八进制转十进制**

A.(3777)8

=

=2,047

B.(1234567)8

=

=342,391

C.(50505)8

=

=20,805

1. **十进制转十六进制**

A.7063

**|**7063

16**|**441···································9

　　 16**|**27··································11

16**|**1·································9

16**|**0·······························1

∴7063=(1B97)16

B.74655

**|**74655

16**|**4665···································15

　　 16**|**291··································9

16**|**18·································3

16**|**1································2

16**|**0······························1

∴74655=(1,239F)16

C.196607

**|**196607

16**|**12287··································15

　　 16**|**767··································15

16**|**47·································15

16**|**2································15

16**|**0······························2

∴196607=(2,FFFF)16

1. **十六进制转十进制**

A.(A1B2C3)16

=

=10,597,059

B.(FFFFFF)16

=

=16,777,215

C.(A2C8075F)16

=

=2,731,018,079

1. **二进制转八进制**

A.(1010101)2

=(001,010,101)2

=(125)8

B.(1011110101101011)2

=(001,011,110,101,101,011)2

=(136,553)8

C.(1111111111111)2

=(001,111,111,111,111)2

=(17,777)8

1. **八进制转二进制**

A.(3777)8

=(11,111,111,111)2

B.(1234567)8

=(1,010,011,100,101,110,111)2

C.(50505)8

=(101,000,101,000,101)2

1. **二进制转十六进制**

A.(1010101)2

=(0101,0101)2

=(55)16

B.(1011110101101011)2

=(1011,1101,0110,1011)2

=(BD6B)16

C.(1111111111111)2

=(0001,1111,1111,1111)2

=(1FFF)16

1. **十六进制转二进制**

A.(A1B2C3)16

=(1010,0001,1011,0010,1100,0011)2

B.(FFFFFF)16

=(1111,1111,1111,1111,1111,1111)2

C.(A2C8075F)16

=(1010,0010,1100,1000,0000,0111,0101,1111)2

1. **八进制转十六进制**

A.(3777)8

=(011,111,111,111)2

=(0111,1111,1111)2

=(7FF)16

B.(1234567)8

=(001,010,011,100,101,110,111)2

=(0101,0011,1001,0111,0111)2

=(5,3977)16

C.(50505)8

=(101,000,101,000,101)2

=(0101,0001,0100,0101)2

=(5145)16

1. **十六进制转八进制**

A.(A1B2C3)16

=(1010,0001,1011,0010,1100,0011)2

=(101,000,011,011,001,011,000,011)2

=(50,331,303)8

B.(FFFFFF)16

=(1111,1111,1111,1111,1111,1111)2

=(111,111,111,111,111,111,111,111)2

=(77,777,777)8

C.(A2C8075F)16

=(1010,0010,1100,1000,0000,0111,0101,1111)2

=(010,100,010,110,010,000,000,011,101,011,111)2

=(24,262,003,537)8

**【作业要求：】**

1、**9月22日前**网上提交本次作业

2、网上作业提交系统网址：[**http://sdn.tongji.edu.cn:7100**](http://sdn.tongji.edu.cn:7100)，初始用户名及密码均为学号

（登录后，按要求更改初始密码并牢记，忘记自设密码者，每次重置**扣除**总评分0.5分）

3、将作业转换为PDF格式（具体转换方法网上自行搜索），改名为1-b1.pdf后提交即可

4、每题所占平时成绩的具体分值见网页

5、超过截止时间提交作业会自动扣除相应的分数，具体见网页上的说明

另：因名单尚未最后确定，网站在9.20后开通