

Instructions: Show all work. Use exact answers unless specifically asked to round. Be sure to complete all parts of each problem.

1. Find the following:

a. $38 \pmod{4}$

2

b. $72 \pmod{11}$

6

c. $115 \pmod{5}$

0

2. Calculate the following problems.

a.
$$\begin{array}{r} 421_{\text{five}} \\ + 23_{\text{five}} \\ \hline \end{array}$$

444

b.
$$\begin{array}{r} 715_{\text{eight}} \\ - 413_{\text{eight}} \\ \hline \end{array}$$

302

c.
$$\begin{array}{r} 21 \\ B7 \\ C7 \\ BD8_{\text{sixteen}} \\ \times 3EF_{\text{sixteen}} \\ \hline \end{array}$$

BD8
B1A8
ASD0
2388

2,E97,658_{sixteen}

A=10
B=11
C=12
D=13
E=14
F=15

3. Convert $F903A_{\text{sixteen}}$ to base 10.

$$\begin{array}{l} \nearrow \nearrow \nearrow \nearrow \nearrow \\ 15 \times 16^4 \\ 9 \times 16^3 \\ 0 \times 16^2 \\ 3 \times 16 + 10 \end{array}$$

1,019,962