**Discrete Math Programs For TI-84 Plus CE:**

PROGRAM:MOD

:Prompt A

:Prompt B

:A-B\*(int(A/B))→C

:Disp C

**Inverse MOD:**

PROGRAM:INVMOD

:Prompt A

:Prompt M

:1→N

:While (N\*M+1-A\*int((N\*M+1)/A))≠0

:N+1→N

:End

:(N\*M+1)/A→I

:Disp I

Euclidian Algorithm:

PROGRAM:EXTEUCLID

:ClrHome

:ClrList L₁,L₂,L₃,L₄,L₅

:Disp "Enter first integer (x):"

:Input X

:Disp "Enter second integer (y):"

:Input Y

:0→A

:1→B

:1→C

:0→D

:1→I

:Disp "Solution"

:While Y≠0

:X→L₁(I)

:Y→L₂(I)

:X→Q

:Y→R

:Q/Y→Q

:int(Q)→Q

:X-Q\*Y→R

:R→L₃(I)

:Disp X," mod ",Y," = ",R

:Q\*B+A→S

:Q\*D+C→T

:B→A

:S→B

:D→C

:T→D

:Y→T

:R→U

:T→X

:U→Y

:I+1→I

:End

:X→L₁(I)

:0→L₂(I)

:0→L₃(I)

:Disp "GCD(",X,",",Y,") = ",X

:Disp "The equation is:"

:Disp X," = ",C,"\*",L₁(1)," - ",A,"\*",L₂(1)

:Disp "Check L₁, L₂, L₃ for steps"

:Stop