# Assembly code

What do the following LMC programs do?

Program A

INP

STA first

INP

STA second

INP

STA third

LDA first

SUB second

BRP ft

st LDA second

SUB third

BRP s

LDA third

OUT

HLT

s LDA second

OUT

HLT

ft LDA first

SUB third

BRP f

t LDA third

OUT

HLT

f LDA first

OUT

HLT

first DAT

second DAT

third DAT

Program B

INP

STA A

LOOP LDA A

OUT

SUB ONE

STA A

BRZ ENDTHIS

BRA LOOP

ENDTHIS LDA A

SUB A

OUT

HLT

A DAT

ONE DAT 1

Program C

INP

STA FIRST

STA SECOND

LOOP LDA SECOND

BRZ ENDTHIS

SUB ONE

STA SECOND

LDA ANS

ADD FIRST

STA ANS

BRA LOOP

ENDTHIS LDA ANS

OUT

SUB ANS

STA ANS

HLT

FIRST DAT

SECOND DAT

ONE DAT 1

ANS DAT 0

Program D

INP

STA NUM

INP

ADD ONE

STA COUNT

LOOP LDA COUNT

SUB ONE

BRZ ENDTHIS

STA COUNT

LDA ANS

ADD NUM

STA ANS

BRA LOOP

ENDTHIS LDA ANS

OUT

HLT

NUM DAT 0

COUNT DAT 0

ONE DAT 1

ANS DAT 0