

4.4

- (i) $191^{\circ}58'$ = $11^{\circ}58'$
(ii) $146^{\circ}11'$ = $326^{\circ}11'$
(iii) $167^{\circ}23'$ = $347^{\circ}23'$
(iv) $278^{\circ}59'$ = $98^{\circ}59'$
(v) $6^{\circ}06'$ = $186^{\circ}06'$
(vi) $313^{\circ}47'$ = $133^{\circ}47'$
(vii) $200^{\circ}20'$ = $20^{\circ}20'$

4.5

- (a) S $45^{\circ}45'$ W
(b) S $5^{\circ}51'$ E
(c) N $5^{\circ}21'$ W
(d) N $72^{\circ}12'$ E
(e) S $88^{\circ}59'$ W
(f) N $3^{\circ}38'$ E
(g) N $45^{\circ}01'$ W

4.11

Azimuths	AB	=	$47^{\circ}41'$
	+ A	=	<u>$63^{\circ}47'00''$</u>
Azimuths	AE		$111^{\circ}28'0''$
	+		<u>180</u>
Azimuths	EA		$291^{\circ}28'0''$
	+ E		<u>$161^{\circ}25'40''$</u>
	-		<u>$452^{\circ}53'40''$</u>
			<u>360</u>
Azimuths	ED		$92^{\circ}25'40''$
	+		<u>180</u>
Azimuths	DE		$272^{\circ}53'40''$
	+ D		<u>$72^{\circ}48'10''$</u>
Azimuths	DC		$345^{\circ}41'50''$
	-		<u>180</u>
Azimuths	CD		$165^{\circ}41'50''$
	+ C		<u>$101^{\circ}30'20''$</u>
Azimuths	CB		$267^{\circ}12'10''$
	-		<u>180</u>
Azimuths	BC		$87^{\circ}12'10''$
	+ B		<u>$140^{\circ}28'50''$</u>
Azimuths	BA		$227^{\circ}41'0''$
	-		<u>180</u>
Azimuths	AB		$47^{\circ}41'0''$

6.2(a)	Station	Field Angle	Correction	Adj Angles
	A	81°22'30"	+30	81°23'
	B	72°32'30"	30	72°33'
	C	89°39'30"	30	89°40'
	D	116°23'30"	30	116°24'
		<u>359°58'</u>	<u>120'</u>	<u>360°00'</u>

$$\text{Error} = 02' \text{ or } 120''$$

$$\text{Correction/Angle} = 30''$$

(b), (c), (d)	Course	Azimuth	Bearing	Distance	Latitude	Departure
	AB	213°19'	S33°19'W	636.45	-531.85	-349.58
	BC	105°52'	S74°08'E	654.45	-178.93	629.52
	CD	15°32'	N15°32'E	382.85	368.87	102.53
	DA	311°56'	N48°04'W	<u>512.77</u>	<u>342.67</u>	<u>-381.46</u>
				2186.56	+0.76	+1.01

$$E = \sqrt{0.76^2 + 1.01^2} = 1.26'$$

$$\text{Accuracy} = \frac{E}{p}$$

$$= \frac{1.26}{2186.56} = \frac{1}{1735} = \frac{1}{1700}$$

6.3(a).

$$C \text{ Lat } AB = \frac{\sum \text{Lat} \times AB}{P}$$

$$C \text{ Dep } AB = \frac{\sum \text{Dep} \times AB}{P}$$

Course	Dist	Lat	Compass Rule	Adj Lat	Dep	Comp Rule	Adj Dep
AB	636.45	-531.85	-0.2212	-532.07	-349.58	-0.294	-349.87
BC	694.45	-178.93	-0.227	-179.16	629.52	-0.302	+629.218
CB	382.85	368.87	-0.133	368.74	102.53	-0.177	+102.355
DA	512.77	342.67	-0.178	342.49	-381.46	-0.237	-381.69
	2186.56	+0.76		0.00	+1.01		0.00

$$\sum \text{dep} = 1.01$$

$$\sum \text{Lat} = 0.76$$

$$P = 2186.56$$

6.3(b)

Station

North

East

B

1000.00

1000.00

-179.16

+629.22

C

820.84

1629.22

+368.74

+102.35

D

1189.58

1731.57

+342.49

-381.70

A

1532.07

1349.87

-532.07

-349.87

B

1000.00

1000.00

4.6

AB = N 33° 58' E

+ B = 8° 13' R

BC = N 42° 11' E

+ C = 2° 21' R

CD = N 44° 32' E

+ D = 14° 41' R

DE = N 59° 13' E

- E = 21° 08' L

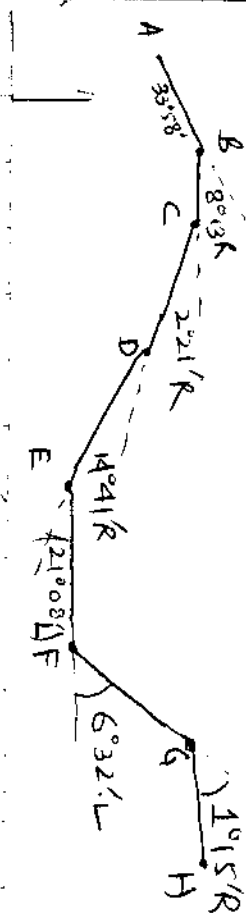
EF = N 38° 05' E

- F = 6° 32' L

FG = N 31° 33' E

+ G = 1° 15' R

N 32° 48' E



4.7

$$A \quad 61^{\circ}27'$$

$$+63^{\circ}41'$$

$$125^{\circ}08'$$

$$17960'$$

$$-12508'$$

$$A = 54^{\circ}52'$$

$$B \quad 61^{\circ}27'$$

$$+48^{\circ}31'$$

$$B = 109^{\circ}58'$$

$$C \quad 48^{\circ}31'$$

$$+16^{\circ}20'$$

$$64^{\circ}51'$$

$$179^{\circ}50'$$

$$-64^{\circ}51'$$

$$C = 115^{\circ}09'$$

$$D \quad 16^{\circ}20'$$

$$+63^{\circ}41'$$

$$D = 80^{\circ}01'$$

