**SURVEY MATH**

**ROUND TO THE UNDERLINED DIGIT**

1. 3.55
2. 21.454
3. 23.805
4. 105.52
5. 7.559
6. 64.389
7. 68.515
8. 42.3651
9. 18.25

**CONVERT DMS TO DECIMAL DEGREES**

1. 71° 40’ 20”
2. 119° 38’ 47”
3. 63° 55’ 30”

**CONVERT DECIMAL DEGREES TO DMS**

1. 227.1572222°
2. 311.5716667°
3. 93.35027778

**ADDING DMS**

1. 269° 48’ 35”

+ 73° 13’ 50”

1. 5° 23’ 59”

+ 43° 18’ 05”

1. 313° 07’ 45”

+ 197° 55’ 32”

**SUBTRACTING DMS**

1. 269° 48’ 35”

– 73° 13’ 50”

1. 89 ° 29’ 33”

– 258° 03’ 48”

1. 241° 52’ 24”

– 48° 55’ 18”

**CONVERT BEARINGS TO AZIMUTHS**

1. S65° 51’ 13”W
2. S86° 32’ 2”E
3. N15° 8’ 3”E
4. N25° 48’ 16”W

**CONVERT AZIMUTHS TO BEARINGS**

1. 13° 48’ 42”
2. 99° 14’ 13”
3. 225° 46’ 21”
4. 300° 19’ 7”

**COMPUTE COORDINATES**

1. STA A

N: 475.000

E: 725.000

BEARING TO STA B: S83° 14’ 51”W

DISTANCE: 245

1. STA C

N: 878.023

E: 512.215

BEARING TO STA D: S76° 23’ 11”E

DISTANCE: 180.13

1. STA E

N: 3987.317

E: 6543.119

BEARING TO STA F: N44° 24’ 48”W

DISTANCE: 730.43

1. STA G

N: 1058.468

E: 2547.987

BEARING TO STA H: N23° 54’ 33”E

DISTANCE: 113.67

**FIND THE BEARING AND DISTANCE**

1. A- B

STA A

N: 336.345

E: 229.542

STA B

N: 541.729

E: 356.337

1. C-D

STA C

N: 1743.593

E: 1845.992

STA D

N: 997.234

E: 2567.112

1. E-F

STA E

N: 5541.235

E: 7781.254

STA F

N: 3547.115

E: 5574.218

1. G-H

STA G

N: 7741.258

E: 6547.214

STA H

N: 8741.321

E: 5412.374

**FIND X**

15° 18’ 41”

X

200.00’

X

33° 07’ 11”

313.15’

X

313.15’

45° 12’ 45”

XX° XX’ XX”

313.15’

412.47’

771.21’

XX° XX’ XX”

541.78’

427.95’

357.21’

XX° XX’ XX”

51° 56’ 48”

X

70° 26’ 06”

275’

75.21’’

82° 54’ 13”

X

41° 18’ 14”

71° 18’ 33”

93.21’

XX° XX’ XX”

101.23’

240.70’

89.45’

XX° XX’ XX”

41° 18’ 14”

X

212.11’

76° 51’ 03”

305.18’

275.81’

212.11’

XX° XX’ XX”

305.18’

39° 07’ 33”

41° 25’ 19”

XX° XX’ XX”

60° 01’ 59”

123° 41’ 22”

**SURVEY MATH**

**ROUND TO THE UNDERLINED DIGIT**

1. 3.55 **4**
2. 21.454 **21.5**
3. 23.805 **23.8**
4. 105.52 **105.5**
5. 7.559 **7.56**
6. 64.389 **64**
7. 68.515 **68.52**
8. 42.3651 **42.37**
9. 18.25 **18.2**

**CONVERT DMS TO DECIMAL DEGREES**

1. 71° 40’ 20” **71.672222**
2. 119° 38’ 47” **119.6464**
3. 63° 55’ 30” **63.925**

**CONVERT DECIMAL DEGREES TO DMS**

1. 227.1572222° **227° 09’ 26”**
2. 311.5716667° **311° 34’ 18”**
3. 93.35027778° **93° 21’ 01”**

**ADDING DMS**

1. 269° 48’ 35”

+ 73° 13’ 50”

**343° 02’ 25”**

1. 5° 23’ 59”

+ 43° 18’ 05”

**48° 42’ 04”**

1. 313° 07’ 45”

+ 197° 55’ 32”

**151° 03’ 17”**

**SUBTRACTING DMS**

1. 269° 48’ 35”

– 73° 13’ 50”

**196° 34’ 45”**

1. 89 ° 29’ 33”

– 258° 03’ 48”

**191° 25’ 45”**

1. 241° 52’ 24”

– 48° 55’ 18”

**192° 57’ 06”**

**CONVERT BEARINGS TO AZIMUTHS**

1. S65° 51’ 13”W **245° 51’ 13”**
2. S86° 32’ 2”E **93° 27’ 58”**
3. N15° 8’ 3”E **15° 08’ 03”**
4. N25° 48’ 16”W **334° 11’ 44”**

**CONVERT AZIMUTHS TO BEARINGS**

1. 13° 48’ 42” **N 13° 48’ 42” E**
2. 99° 14’ 13” **S 80° 45’ 47” E**
3. 225° 46’ 21” **S 45° 46’ 21” W**
4. 300° 19’ 7” **N 59° 40’ 53” W**

**COMPUTE COORDINATES**

1. STA A

**Sta B:**

**N = 446.193**

**E = 481.699**

N: 475.000

E: 725.000

BEARING TO STA B: S83° 14’ 51”W

DISTANCE: 245’

1. STA C

**Sta C:**

**N = 835.625**

**E = 687.284**

N: 878.023

E: 512.215

BEARING TO STA D: S76° 23’ 11”E

DISTANCE: 180.13’

1. STA E

**Sta F:**

**N = 4509.070**

**E = 6031.942**

N: 3987.317

E: 6543.119

BEARING TO STA F: N44° 24’ 48”W

DISTANCE: 730.43’

1. STA G

**Sta H:**

**N = 1162.384**

**E = 2594.056**

N: 1058.468

E: 2547.987

BEARING TO STA H: N23° 54’ 33”E

DISTANCE: 113.67’

**FIND THE BEARING AND DISTANCE**

1. A- B

STA A

N: 336.345

**N 31° 41’ 22” E**

**DIST = 241.370’**

E: 229.542

STA B

N: 541.729

E: 356.337

1. C-D

STA C

N: 1743.593

E: 1845.992

**S 44° 00’ 53” E**

**DIST = 1037. 818’818’**

STA D

N: 997.234

E: 2567.112

1. E-F

STA E

N: 5541.235

**S 47° 54’ 05” W**

**DIST = 2974.479’ 818’**

E: 7781.254

STA F

N: 3547.115

E: 5574.218

1. G-H

STA G

N: 7741.258

**N 48° 36’ 44” W**

**DIST = 1512.610’ 818’**

E: 6547.214

STA H

N: 8741.321

E: 5412.374

**FIND X**

 **X = 54.76’**

15° 18’ 41”

X

200.00’

X

 **X = 373.90’**

33° 07’ 11”

313.15’

X

 **X = 441.23’**

313.15’

45° 12’ 45”

 **X = 37° 12’ 22”**

XX° XX’ XX”

313.15’

412.47’

771.21’

 **X = 45° 22’ 18”**

XX° XX’ XX”

541.78’

427.95’

 **X = 56° 35’ 05”**

357.21’

XX° XX’ XX”

51° 56’ 48”

X

 **X = 329.07’**

70° 26’ 06”

275’

75.21’’

 **X = 62.68’**

82° 54’ 13”

X

41° 18’ 14”

71° 18’ 33”

 **X = 47° 58’ 26”**

93.21’

XX° XX’ XX”

101.23’

240.70’

89.45’

 **X = 14° 11’ 57”**

XX° XX’ XX”

41° 18’ 14”

X

212.11’

 **X = 329.66’**

76° 51’ 03”

305.18’

275.81’

212.11’

 **X = 61° 21’ 33”**

XX° XX’ XX”

305.18’

39° 07’ 33”

41° 25’ 19”

XX° XX’ XX”

60° 01’ 59”

123° 41’ 22”

 **X = 103° 10’ 29”**