p. 886) 18-26

⑱ B= 35.8°
C= 71.2°
c= 17.8

⑲ B=119°
a= 6.5
c= 8.5

⑳ A= 35°
a= 12.3
c= 14.6

㉑ B=54.1°   B= 125.9°
C=87.9° OR C= 16.1°
c=30.8   c= 8.6

㉒ C=61°
a=31.8
b=34.9

㉓ B=37.5°
C=28.5°
c= 7.8

㉔ NO TRIANGLE

㉕ C=99°
a=62.7
c=82.0

㉖ A=116.6°   A=21.4°
C=42.4° OR C=137.6°
a=42.4   a=17.3

Solutions

⑱ SSA 1 △
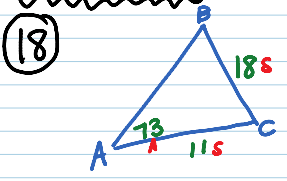
$$\frac{\sin B}{11} = \frac{\sin 73}{18}$$

$$\sin B = \frac{11\sin 73}{18}$$

$$\sin B = .58$$

$$B = \sin^{-1}(.58)$$

$$B = 35.76°$$
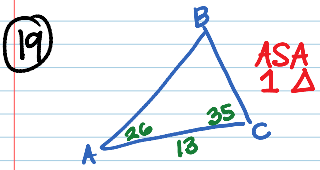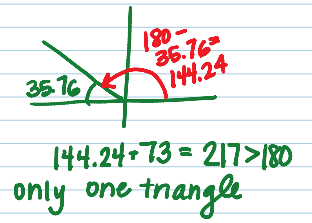
$\angle C = 180-(35.76+73)$
$C = 71.24°$

$$\frac{\sin 71.24}{c} = \frac{\sin 73}{18}$$

$$c = \frac{18\sin 71.24}{\sin 73}$$

$$c = 17.82$$

$180 - 35.76 = 144.24$
35.76
$144.24 + 73 = 217 > 180$
only one triangle

⑲ ASA 1 △

$B = 180 - (26+35)$
$B = 119°$

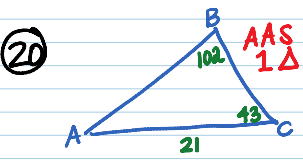$$\frac{\sin 26}{a} = \frac{\sin 119}{13}$$

$$a = \frac{13\sin 26}{\sin 119}$$

$$a = 6.5$$

$$\frac{\sin 35}{c} = \frac{\sin 119}{13}$$

$$c = \frac{13\sin 35}{\sin 119}$$

$$c = 8.53$$

⑳ AAS 1 △

$A = 180 - (102+43)$
$A = 35°$

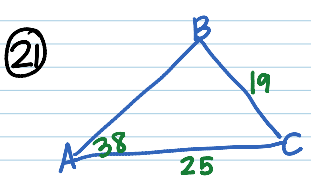$$\frac{\sin 43}{c} = \frac{\sin 102}{21}$$

$$c = \frac{21\sin 43}{\sin 102}$$

$$c = 14.64$$

$$\frac{\sin 35}{a} = \frac{\sin 102}{21}$$

$$a = \frac{21\sin 35}{\sin 102}$$

$$a = 12.31$$

㉑ SSA 2 △'s

$$\frac{\sin B}{25} = \frac{\sin 38}{19}$$

$$\sin B = \frac{25\sin 38}{19}$$

$$B = \sin^{-1}(.81)$$

$$B = 54.10°$$

$C = 180 - (54.1+38)$
$C = 87.9°$

$$\frac{\sin 87.9}{c} = \frac{\sin 38}{19}$$

$$c = \frac{19\sin 87.9}{\sin 38}$$

$$c = 30.84$$

OR

$B = 180 - 54.1$
$B = 125.9°$

$C = 180 - (125.9+38)$
$C = 16.1°$

$$\frac{\sin 16.1}{c} = \frac{\sin 38}{19}$$

$$c = \frac{19\sin 16.1}{\sin 38}$$

$$c = 8.56$$

㉒ ASA 1 △

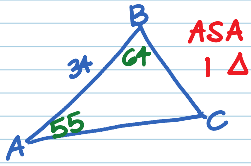$C = 180 - (55+64)$

$$\frac{\sin 55}{c} = \frac{\sin 61}{34}$$

$$\frac{\sin 64}{b} = \frac{\sin 61}{34}$$

㉒

ASA
1 △

$C = 180 - (55 + 64)$
$C = 61°$

$\dfrac{\sin 55}{a} = \dfrac{\sin 61}{34}$

$a = \dfrac{34 \sin 55}{\sin 61}$

$a = 31.84$
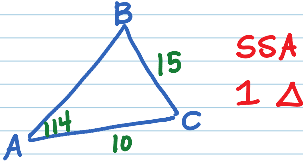
$\dfrac{\sin 64}{b} = \dfrac{\sin 61}{34}$

$b = \dfrac{34 \sin 64}{\sin 61}$

$b = 34.94$

$c = 8.56$

㉓

SSA
1 △

$\dfrac{\sin B}{10} = \dfrac{\sin 114}{15}$

$\sin B = \dfrac{10 \sin 114}{15}$

$B = \sin^{-1}(.61)$

$B = 37.52°$
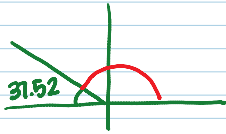
$C = 180 - (37.52 + 114)$
$C = 28.48°$

$\dfrac{\sin 28.48}{c} = \dfrac{\sin 114}{15}$

$c = \dfrac{15 \sin 28.48}{\sin 114}$

$c = 7.83$

$B = 180 - 37.52$
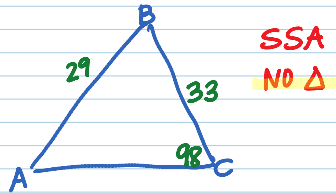$B = \cancel{142.48°}$

$C = 180 - (114 + 142.48)$
$C = - \cancel{76.48}$ not possible
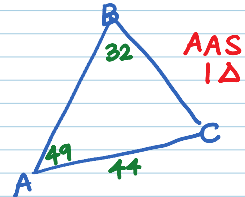

㉔

SSA
NO △

$\dfrac{\sin A}{33} = \dfrac{\sin 98}{29}$

$\sin A = \dfrac{33 \sin 98}{29}$

$A = \sin^{-1}(1.13)$
↑
DOES NOT EXIST

㉕

AAS
1 △

$C = 180 - (32 + 49)$
$C = 99°$

$\dfrac{\sin 49}{a} = \dfrac{\sin 32}{44}$
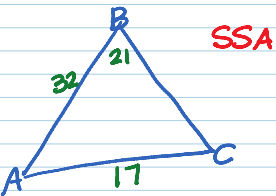
$a = \dfrac{44 \sin 49}{\sin 32}$

$a = 62.66$

$\dfrac{\sin 99}{c} = \dfrac{\sin 32}{44}$

$c = \dfrac{44 \sin 99}{\sin 32}$

$c = 82.01$

㉖

SSA

$\dfrac{\sin C}{32} = \dfrac{\sin 21}{17}$

$\sin C = \dfrac{32 \sin 21}{17}$

$C = \sin^{-1}(.67)$

$C = 42.42°$

$A = 180 - (21 + 42.42)$
$A = 116.58°$

$\dfrac{\sin 116.58}{a} = \dfrac{\sin 21}{17}$

$a = \dfrac{17 \sin 116.58}{\sin 21}$

$a = 42.42$

OR

$C = 180 - 42.42$
$C = 137.58°$

$A = 180 - (21 + 137.58)$
$A = 21.42°$

$\dfrac{\sin 21.42}{a} = \dfrac{\sin 21}{17}$

$a = \dfrac{17 \sin 21.42}{\sin 21}$

$a = 17.38$

$$a = \frac{17 \sin 21.42}{\sin 21}$$

$$a = 17.33$$