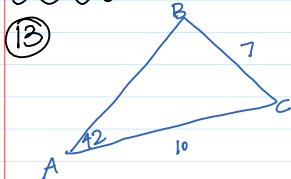


- ⑬ $C = 5.38$ $C = 9.49$ ⑭ $C = 12.56$ ⑮ no triangle ⑰ 222.33 units^2
 $C = 30.95^\circ$ $C = 65.11^\circ$ $B = 49.74^\circ$
 $B = 107.05^\circ$ $B = 72.89^\circ$ $c = 73.26$
 ⑲ $4.26u^2$ ⑳ $8.18u^2$ ㉔ $113.84u^2$

Solutions



SSA \Rightarrow ambiguous case!

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$7^2 = 10^2 + c^2 - 2(10)(c)\cos 42$$

$$0 = c^2 - (20\cos 42)c + 51$$

$$c = 5.38, 9.49 \Rightarrow \text{Two TRIANGLES}$$

1st Δ
 $c = 5.38$

2nd Δ
 $c = 9.49$

$$\frac{\sin 42}{7} = \frac{\sin C}{5.38}$$

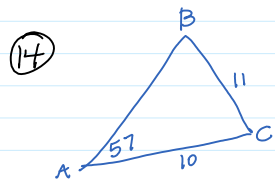
$$C = 30.95^\circ$$

$$\frac{\sin 42}{7} = \frac{\sin C}{9.49}$$

$$C = 65.11^\circ$$

$$B = 107.05^\circ$$

$$B = 72.89^\circ$$



SSA \Rightarrow ambiguous case!

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$11^2 = 10^2 + c^2 - 2(10)(c)\cos 57$$

$$0 = c^2 - (20\cos 57)c - 21$$

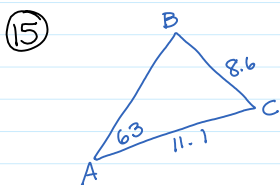
$$c = -1.07, 12.56 \Rightarrow \text{one triangle}$$

$$C = 12.56$$

$$B = 49.74^\circ$$

$$\frac{\sin 57}{11} = \frac{\sin C}{12.56}$$

$$C = 73.26^\circ$$

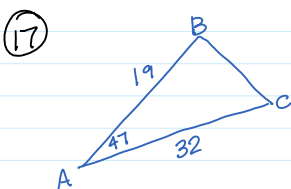


SSA \Rightarrow ambiguous case!

$$8.6^2 = 11.1^2 + c^2 - 2(11.1)(c)\cos 63$$

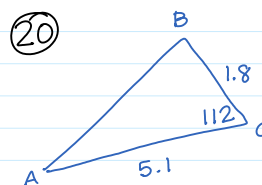
$$0 = c^2 - (22.2\cos 63)c + 49.25$$

$$c = \text{no real solution} \Rightarrow \text{no triangle}$$



$$A = \frac{1}{2}(19)(32)\sin 47$$

$$A = 222.33 \text{ units}^2$$



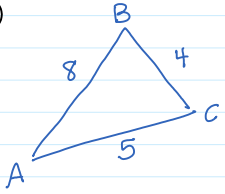
$$A = \frac{1}{2}(1.8)(5.1)\sin 112$$

$$A = 4.26 \text{ units}^2$$

⑳ $S = 8 + 4 + 5 = 17$

㉔ $S = 23 + 12 + 19 = 54$

21

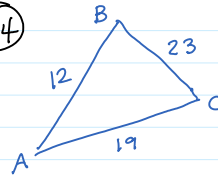


$$S = \frac{8+4+5}{2} = \frac{17}{2} = 8.5$$

$$A = \sqrt{8.5(8.5-8)(8.5-4)(8.5-5)}$$

$$A = 8.18 \text{ units}^2$$

24



$$S = \frac{23+12+19}{2} = 27$$

$$A = \sqrt{27(27-23)(27-12)(27-19)}$$

$$A = 113.84 \text{ units}^2$$