

b.1/b.2 Review

Solve

1.) $B = 32^\circ$ $C = 25^\circ$ $a = 18$

$A = 123^\circ$ $b = 11.4$ $c = 9.1$

$$b = \frac{18 \sin 25^\circ}{\sin 32^\circ}$$

$$b = 11.4$$

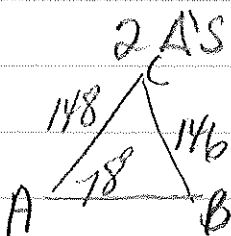
$$c = \frac{18 \sin 25^\circ}{\sin 123^\circ}$$

$$c = 9.1$$

2.) $a = 146$ $b = 148$ $A = 78^\circ$

$h < a < b$

$h = 148 \sin 78^\circ$
 $= 144.8$

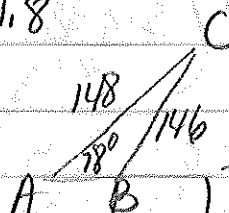


$\sin^{-1}((\sin 78^\circ) 148) = m\angle B$

$m\angle B = 82.5^\circ$
 $m\angle C = 19.5^\circ$

$c = \frac{\sin(19.5^\circ) 146}{\sin 78^\circ}$

$c = 49.8$



$m\angle B = 180 - 78.5^\circ = 97.5^\circ$
 $m\angle C = 4.5^\circ$

$c = \frac{\sin(4.5^\circ) 146}{\sin 78^\circ}$

$c = 11.7$

3.) $b = 120$ $c = 142$ $B = 72^\circ$

$h > b$

$b < c$

$h = c \sin B$
 $= 142 \sin 72^\circ$
 $= 135.1$

No triangle

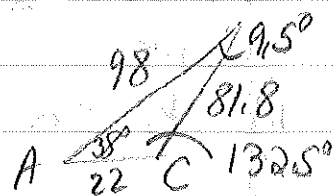
4) $A = 38^\circ$ $b = 22$, $c = 98$

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

$$a^2 = 22^2 + 98^2 - 2(22)(98)\cos 38$$

$$a^2 = 6690.1$$

$$a = 81.8$$



$$\frac{\sin B}{22} = \frac{\sin 38}{81.8}$$

$$\sin^{-1}\left(\frac{\sin 38 \cdot 22}{81.8}\right)$$

$$\begin{aligned} m\angle B &= 9.5^\circ \\ m\angle C &= 132.5^\circ \end{aligned}$$

5) $a = 32$, $b = 47$, $c = 25$

$$\sin C = \frac{\sin(110.5^\circ) 25}{47}$$

$$\cos B = \frac{a^2 + c^2 - b^2}{2ac}$$

$$= \frac{32^2 + 25^2 - 47^2}{2(32)(25)}$$

$$m\angle B = 110.5^\circ$$

$$m\angle C = 29.9^\circ$$

$$m\angle A = 39.6^\circ$$

$$\frac{1}{4} s(s-a)(s-b)(s-c)$$

$$6) s = \frac{121+82+90}{2} = 146.5 = \sqrt{146.5(146.5-121)(146.5-82)(146.5-90)}$$

$$= \sqrt{146.5(25.5)(64.5)(56.5)}$$

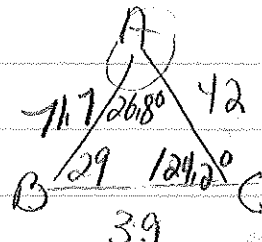
$$\boxed{3689.7 u^2}$$

$$7) A = \frac{1}{2} bc \sin A$$

$$\frac{1}{2} 10(19) \sin 71$$

$$\boxed{A = 89.8 u^2}$$

$$8) s = \frac{25+21+34}{2} = 40 \quad \sqrt{40(15)(19)(6)} = \boxed{261.5 u^2}$$

$$9) B = 29^\circ \quad b = 42 \quad a = 39$$


$$A = \frac{1}{2} ac \sin B$$

$$= \frac{1}{2} (39)(71.7) \sin 29$$

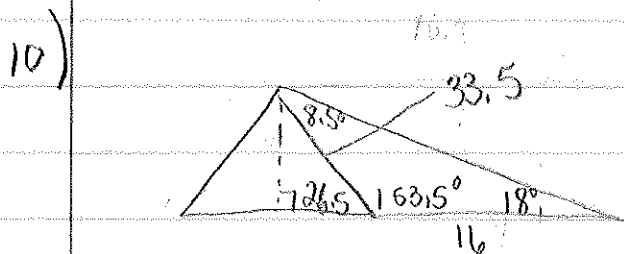
$$\boxed{A = 677.8 u^2}$$

$$C = \frac{42 \sin 124.2}{\sin 29}$$

$$C = 71.7$$

$$\sin A = \frac{39 \sin 29}{42}$$

$$m\angle A = 26.8^\circ$$



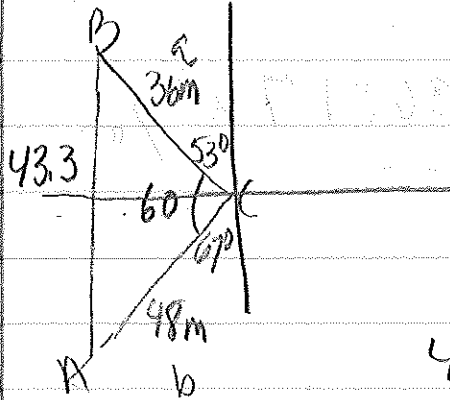
$$\sin 26.5 = \frac{x}{33.5}$$

$$x = 14.9$$

$$b = \frac{16}{\sin 18}$$

$$b = \frac{16 \sin 18^\circ}{\sin 8.5} = 33.5$$

11)



$$c^2 = a^2 + b^2 - 2ab \cos C$$

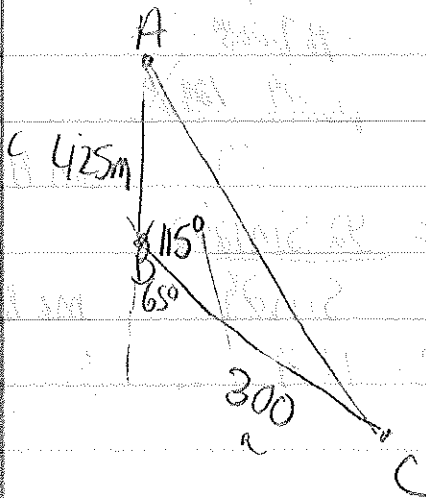
$$36^2 + 48^2 - 2(36)(48) \cos 60$$

$$c^2 = 1872$$

$$c = 43.3$$

43.3 miles

12)



$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$= 425^2 + 300^2 - 2(425)(300) \cos 115$$

$$b = 615.1 \text{ m}$$