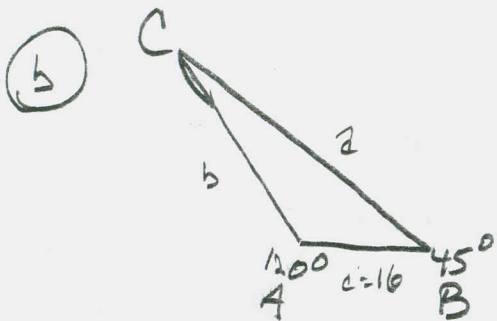


$$A = 180^\circ - 135^\circ - 10^\circ = 180^\circ - 145^\circ = \boxed{35^\circ = A}$$

$$\frac{a}{\sin A} = \frac{c}{\sin C}$$

$$a = \frac{c \sin A}{\sin C} = \frac{45 \sin 35^\circ}{\sin 135^\circ} \approx \boxed{36.5022 \approx a}$$

$$b = \frac{c \sin B}{\sin C} = \frac{45 \sin 10^\circ}{\sin 135^\circ} \approx \boxed{11.0509 \approx b}$$

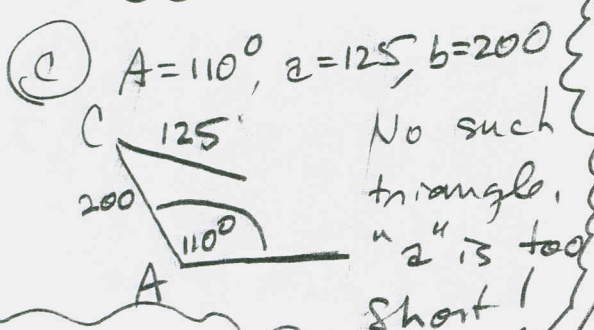


$$C = 180^\circ - 45^\circ - 120^\circ = 180^\circ - 165^\circ = \boxed{15^\circ = C}$$

$$a = \frac{c \sin A}{\sin C} = \frac{16 \sin 120^\circ}{\sin 15^\circ} \approx \boxed{53.5370 \approx a}$$

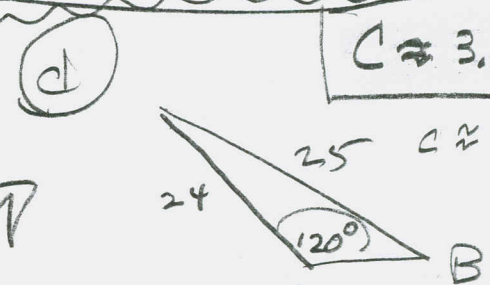
$$b = \frac{c \sin B}{\sin C} = \frac{16 \sin 45^\circ}{\sin 15^\circ} \approx \boxed{43.7128 \approx b}$$

$$C \approx \boxed{3.7587^\circ}$$



$$c = \frac{25 \sin C}{\sin A} \approx \boxed{1.8924 \approx c}$$

This is with part (d)



$$\frac{\sin B}{24} = \frac{\sin 120^\circ}{25}$$

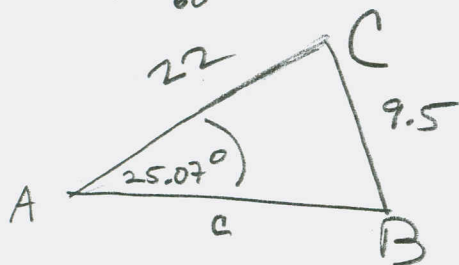
$$\sin B = \frac{24 \sin 120^\circ}{25}$$

$$B = \sin^{-1}\left(\frac{24 \sin(120^\circ)}{25}\right) \approx \boxed{56.2412^\circ \approx B}$$

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(e) $A = 25^{\circ} 4'$, $a = 9.5$, $b = 22$

$$25 + \frac{4}{60} = 25.0\bar{6}$$



$$\frac{\sin B}{22} = \frac{\sin(25.0\bar{6})}{9.5}$$

$$B = \sin^{-1}\left(\frac{22 \sin(25.0\bar{6})}{9.5}\right) \approx \boxed{B \approx 78.8536^{\circ}}$$

$$C = 180^{\circ} - A - B$$

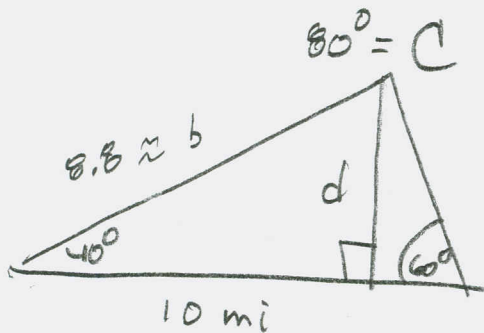
$$\approx 180^{\circ} - 25.0\bar{6} - 78.8536^{\circ}$$

$$\approx \boxed{76.0798^{\circ} \approx C}$$

So
 $c \approx \frac{9.5 \sin(76.0798^{\circ})}{\sin(25.0\bar{6}^{\circ})}$

$$\boxed{c \approx 21.7645}$$

(2)



$$C = 180^{\circ} - 40^{\circ} - 60^{\circ} = 80^{\circ}$$

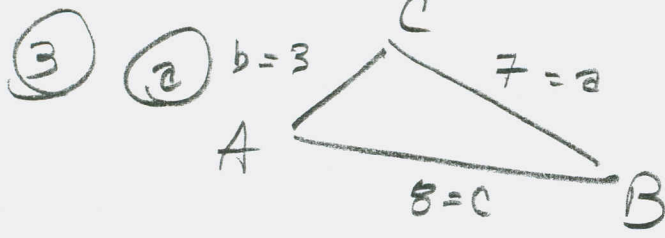
$$b = \frac{10 \sin 60^{\circ}}{\sin 80^{\circ}} \approx 8.793852416$$

$$\frac{d}{b} = \sin 60^{\circ} \rightarrow$$

$$d \approx 8.793852416 \sin 60^{\circ}$$

$$\approx 7.615699589$$

$$\approx \boxed{8 \text{ miles away}}$$



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

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

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

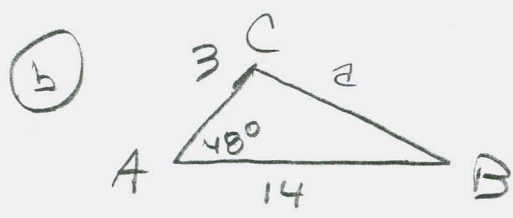
$$A = \cos^{-1} \left(\frac{b^2 + c^2 - a^2}{2bc} \right)$$

$$A = \cos^{-1} \left(\frac{3^2 + 8^2 - 7^2}{2(3)(8)} \right)$$

$$A \approx 60^\circ$$

$$C = \cos^{-1} \left(\frac{a^2 + b^2 - c^2}{2ab} \right) = \cos^{-1} \left(\frac{7^2 + 3^2 - 8^2}{2(7)(3)} \right) \approx 98.2132^\circ \approx C$$

$$B \approx 180^\circ - 60^\circ - 98.2132^\circ \approx 21.7868^\circ \approx B$$



$$a^2 = 3^2 + 14^2 - 2(3)(14) \cos 48^\circ$$

$$\approx 148.7930291 \rightarrow$$

$$a \approx 12.1981$$

$$\frac{\sin B}{3} \approx \frac{\sin 48^\circ}{12.1981}$$

$$\sin B \approx \frac{3 \sin 48^\circ}{12.1981} \approx .1827693723 \rightarrow B \approx \sin^{-1}(\text{ANS})$$

$$\approx B \approx 10.5311^\circ$$

$$C \approx 180^\circ - 48^\circ - 10.5311^\circ$$

$$\approx 121.4689^\circ \approx C$$