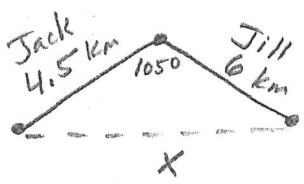
10.2 - Sol

(7)

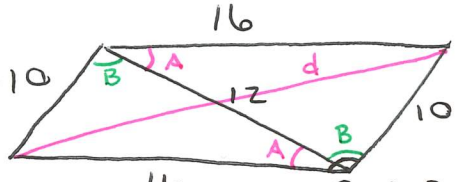


$x^2 = 6^2 + 4.5^2 - 2(6)(4.5)\cos 105°$

$x^2 = 70.2262$

$x \approx \boxed{8.38}$ km

(52)



$\cos A = \dfrac{16^2 + 12^2 - 10^2}{2(16)(12)}$

$A \approx 38.62°$

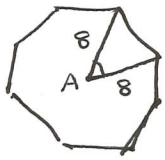
$\cos B = \dfrac{12^2 + 10^2 - 16^2}{2(12)(10)}$

$B \approx 92.87^2$

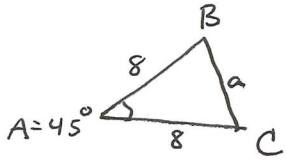
$\cos 131.49° = \dfrac{10^2 + 16^2 - d^2}{2(10)(16)}$

$2(10)(16)\cos 131.49° - 10^2 - 16^2 = -d^2$ $\qquad \boxed{d \approx 23.8}$

(53)



$A = \dfrac{360°}{8} = 45°$



$B = C$ and $45° + B + C = 180$

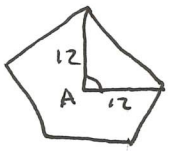
$B = C = 67.5°$

$\dfrac{8}{\sin 67.5°} = \dfrac{a}{\sin 45°}$

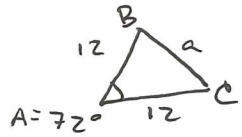
$a = \dfrac{8\sin 45°}{\sin 67.5°} \approx 6.12$

perimeter $= 8a \approx \boxed{49 \text{ in}}$

(54)



$A = \dfrac{360°}{5} = 72°$



$B = C$ & $72° + B + C = 180°$

$B = C = 54°$

$\dfrac{12}{\sin 54°} = \dfrac{a}{\sin 72°}$

$a = \dfrac{12\sin 72°}{\sin 54°} \approx 14.1$

perimeter $= 5a = \boxed{70.5 \text{ cm}}$