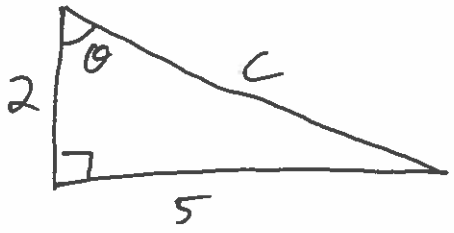
HW 4

Section 2.2A

2)



$\rightarrow 2^2 + 5^2 = c^2$

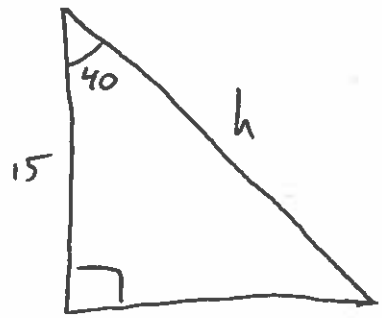
$\rightarrow 29 = c^2$

$\rightarrow \sqrt{29} = c$

$\sin(\theta) = \frac{5}{c} = \frac{5}{\sqrt{29}}$

$\cos(\theta) = \frac{2}{c} = \frac{2}{\sqrt{29}}$

3)



$\cos(40) = \frac{15}{h} \rightarrow h\cos(40) = 15$

$\rightarrow h = \frac{15}{\cos(40)} \approx 19.58$

7) $\sin^2\theta + \cos^2\theta = 1 \rightarrow \left(-\frac{3}{5}\right)^2 + \cos^2\theta = 1$

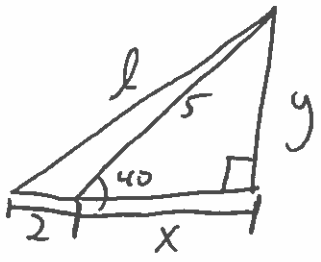
$\rightarrow \frac{9}{25} + \cos^2\theta = 1$

$\rightarrow \cos^2\theta = 1 - \frac{9}{25} = \frac{16}{25}$

$\rightarrow \cos\theta = \pm\frac{4}{5}$

Since $\cos\theta > 0$ (the problem tells us this) $\therefore \theta = \frac{4}{5}$

(10)



$\cos(40) = \frac{x}{5}$

$\rightarrow x = 5\cos(40)$

$\sin(40) = \frac{y}{5} \rightarrow y = 5\sin(40)$

The Pythagorean Theorem tells us that

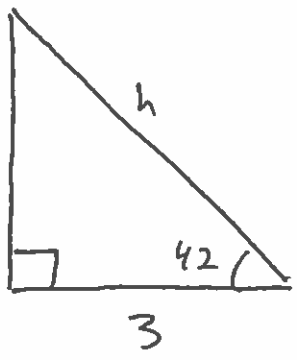
$(x+2)^2 + y^2 = l^2$

$\rightarrow (5\cos(40) + 2)^2 + (5\sin(40))^2 = l^2$

$\rightarrow 44.32 \approx l^2$

$\rightarrow l \approx 6.66$

(17)



$\rightarrow \cos(42) = \frac{3}{h}$

$\rightarrow h\cos(42) = 3$

$\rightarrow h = \frac{3}{\cos(42)} \approx 4.04$ miles long