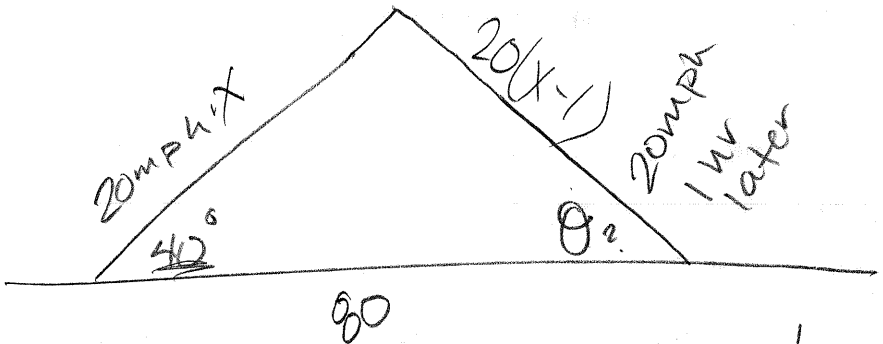
11/14/2012 - Exam 3 Review

Math 1060

5.2 #44



$t = ?\ x$

$$(20(x-1))^2 = (20x)^2 + 80^2 - 2 \cdot 20x \cdot 80 \cos 40^\circ$$

$$400(x-1)^2 = 400x^2 + 6400 - 3200x \cos 40$$

$$400(x^2 - 2x + 1)$$

$$400x^2 - 800x + 400 = 400x^2 + 6400 - 3200x\cos 40$$

$$-400x^2 + \quad - 400 - 400x^2 - 400 +$$

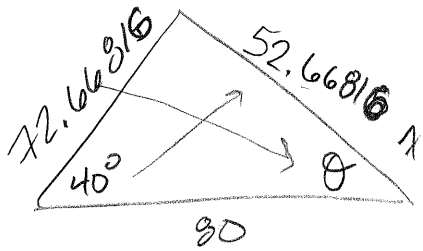
$$= 6000$$

$$-800x + 3200x\cos 40$$

$$\frac{x(-800 + 3200\cos 40)}{\#} = \frac{6000}{\#}$$

$$x = 3.6334 \text{ hrs}$$

$$3{:}38 \text{ am}$$



$$\frac{\sin\theta}{72.66816} = \frac{\sin 40}{52.66816} \cdot 72.66816$$

$$\sin\theta = .8868 \qquad \theta = 62.5^\circ$$

5.3

32

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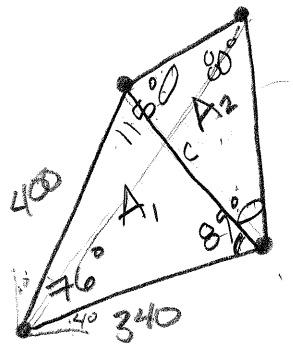
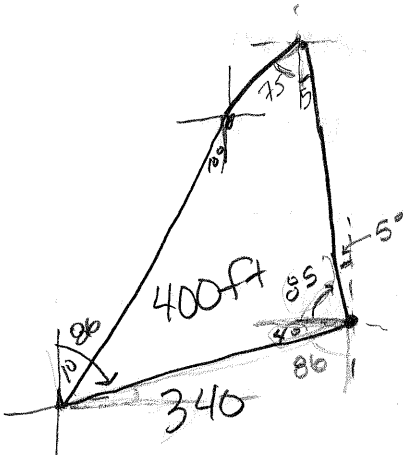
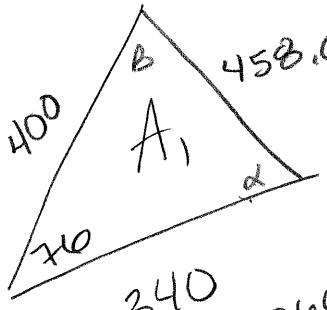




$c^2 = 400^2 + 340^2 - 2 \cdot 400 \cdot 340 \cos 76$

$c^2 = \sqrt{209,797.\text{stuff}}$

$c = 458.03629$



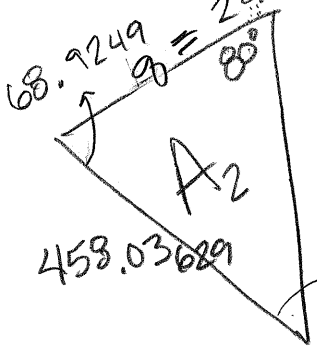
$$\frac{\sin\beta}{340} = \frac{\sin 76}{458.03629}$$

$\sin\beta =$

$\beta = 46.0751$

$\alpha = 57.9249$

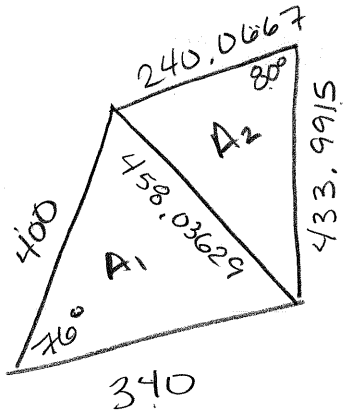
340 = 240.0667



$a = 433.9915$

31.0751

89 - 57.9249



$$A_1 = \frac{1}{2}(400)(340)\sin 76^\circ$$

$$= 51302.2507$$

$$A_2 = \frac{1}{2}(240.0667)(433.9915)\sin 80^\circ$$

$$= 65980.10939$$

Area of Quad $= A_1 + A_2$

$= \boxed{117,282.4 ft^2}$

$\sin\theta$

Ratio is (+) in Quad I, II

Ratio is (−) in Quad III, IV

$\sin^{-1}(r)$

Returns angle in Quad I (if $r>0$)

Returns angle in Quad IV (if $r<0$)

$\cos\theta$

Ratio is (+) in Quad I, IV

Ratio is (−) in Quad II, III

$\cos^{-1}(r)$

Returns angle in Quad I (if $r>0$)

Returns angle in Quad II (if $r<0$)

$\tan\theta$

Ratio is (+) in Quad I, III

Ratio is (−) in Quad II, IV

$\tan^{-1}(r)$

Returns angle in Quad I (if $r>0$)

Returns angle in Quad IV (if $r<0$)