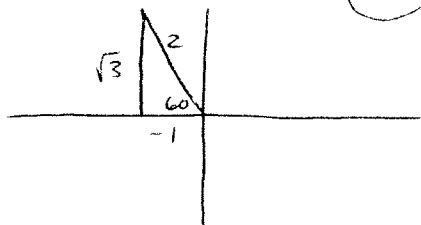
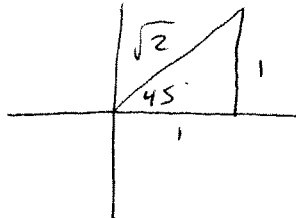


Additional review questions (trig)

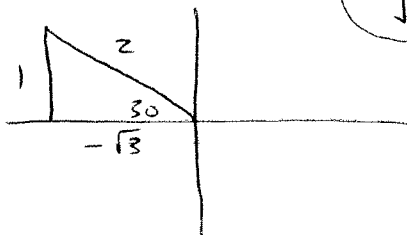
① a) $\sin 120^\circ = \frac{\sqrt{3}}{2}$



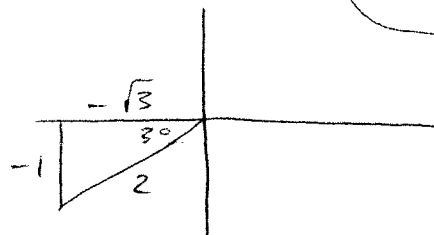
b) $\cos 45^\circ = \frac{1}{\sqrt{2}}$



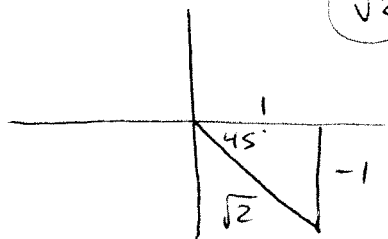
c) $\tan 150^\circ = -\frac{1}{\sqrt{3}}$



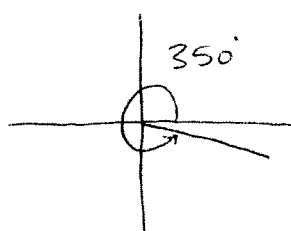
d) $\cos 210^\circ = -\frac{\sqrt{3}}{2}$



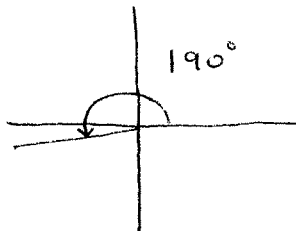
e) $\sin 315^\circ = -\frac{1}{\sqrt{2}}$



② a) $\sin 350^\circ = \sin 10^\circ$



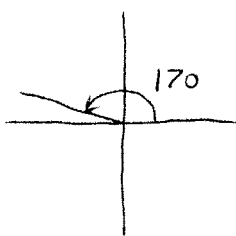
$$360 - 350 = 10^\circ$$



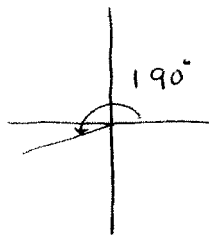
$$180 + 10 = 190^\circ$$

$$b) \cos 170^\circ = \cos(190^\circ)$$

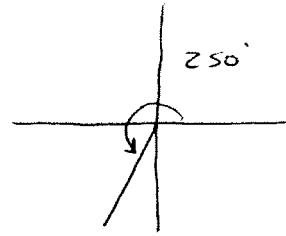
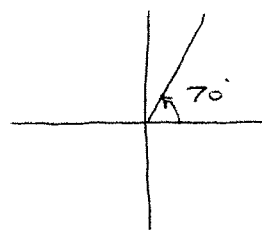
$$c) \tan 70^\circ = \tan(250^\circ)$$



$$180 - 170 = 10^\circ$$

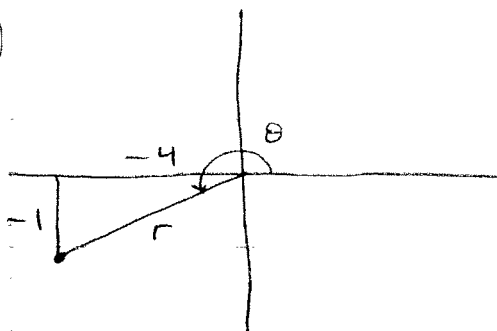


$$180 + 10 = 190^\circ$$



$$180 + 70 = 250^\circ$$

3.

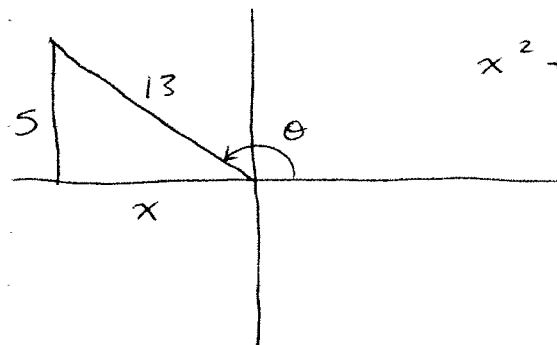


$$r^2 = 1 + 16$$

$$r = \sqrt{17}$$

$$\sin \theta = \frac{-1}{\sqrt{17}}$$

4.



$$x^2 + 5^2 = 13^2$$

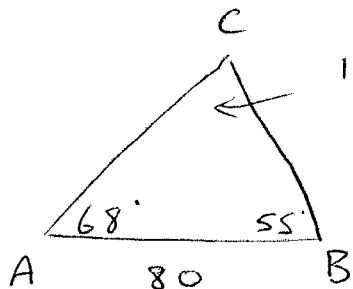
$$x^2 = 169 - 25$$

$$x = 12$$

↑
-12!!

$$\cos \theta = \frac{-12}{13}$$

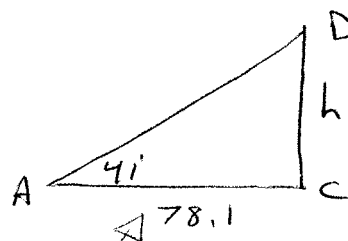
5.



$$180 - 68 - 55 = 57^\circ$$

$$\frac{b}{\sin 55} = \frac{80}{\sin 57^\circ}$$

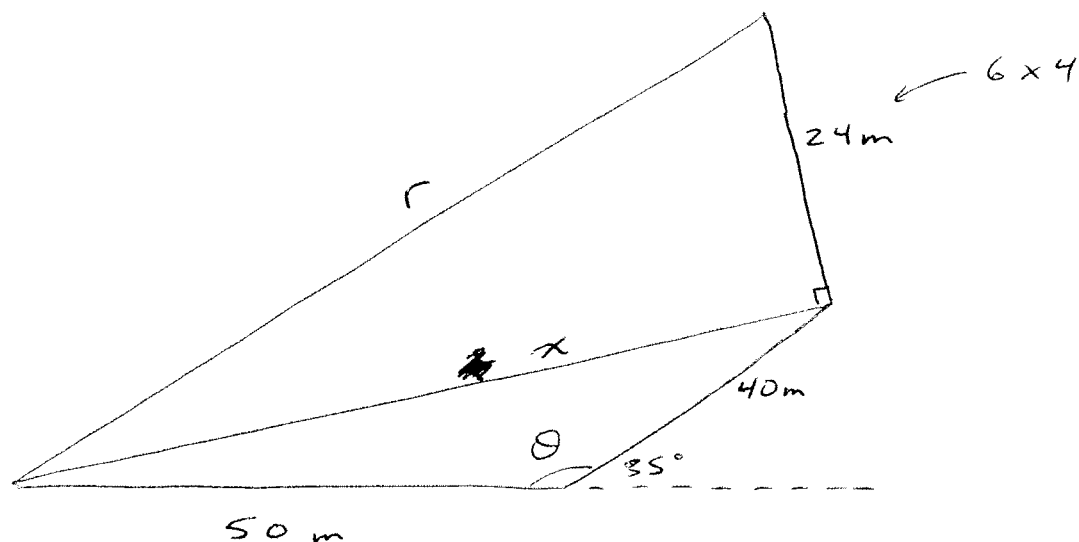
$$b = 78.1 \text{ m}$$



$$h = 78.1 \tan 41^\circ$$

$$= 67.9 \text{ m}$$

6.



$$\theta = 180 - 35$$

$$= 145^\circ$$

$$x^2 = 50^2 + 40^2 - 2(50)(40)\cos 145^\circ$$

$$x^2 = 27376.6$$

$$x = 165.45$$

$$r^2 = 165.45^2 + 24^2$$

$$r^2 = 27952$$

$$r = 167.19 \text{ m}$$

7. a) L.S. = $\frac{\sin^2 \theta}{\cos^2 \theta} - 1$

$$= \frac{\sin^2 \theta}{\cos^2 \theta} \times \frac{1}{\sin^2 \theta} - 1$$

$$= \frac{1}{\cos^2 \theta} - \frac{1}{1} = \frac{1 - \cos^2 \theta}{\cos^2 \theta} = \frac{\sin^2 \theta}{\cos^2 \theta}$$

$$= \tan^2 \theta = 25 \checkmark$$

$$b) \text{ R.S.} = 1 - \sin^2 \theta \frac{\cos^2 \theta}{\sin^2 \theta}$$

$$= 1 - \cos^2 \theta$$

$$= \sin^2 \theta = \text{L.S.} \checkmark$$

$$c) \text{ ~~scribbled out~~ R.S.} = \frac{1}{\sin^2 \theta} - \frac{1}{1}$$

$$= \frac{1 - \sin^2 \theta}{\sin^2 \theta}$$

$$= \frac{\cos^2 \theta}{\sin^2 \theta}$$

$$= \frac{1}{\sin^2 \theta} \cos^2 \theta$$

$$= \csc^2 \theta \cos^2 \theta = \text{L.S.} \checkmark$$

$$d) \text{ L.S.} = \sin \theta \frac{\sin \theta}{\cos \theta} + \cos \theta$$

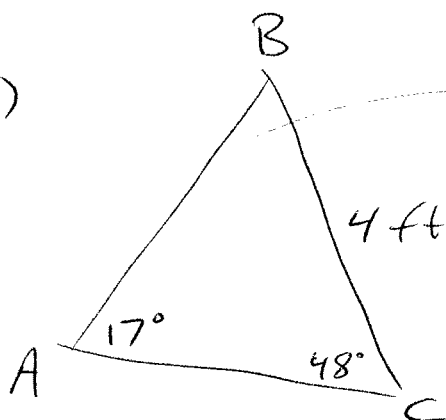
$$= \frac{\sin^2 \theta}{\cos \theta} + \frac{\cos \theta}{1}$$

$$= \frac{\sin^2 \theta + \cos^2 \theta}{\cos \theta}$$

$$= \frac{1}{\cos \theta}$$

$$= \sec \theta = \text{R.S.} \checkmark$$

(8.) a)



$$B = 180 - 48 - 17$$

$$B = 115^\circ$$

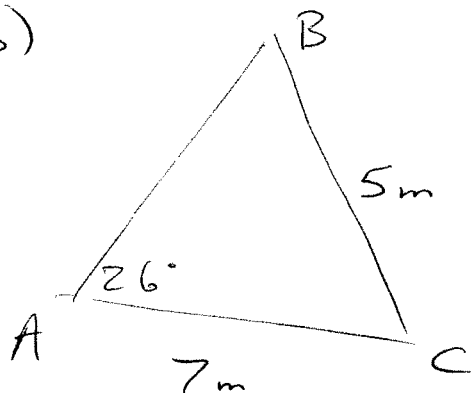
$$\frac{b}{\sin 115^\circ} = \frac{4}{\sin 17^\circ}$$

$$b = 12.4 \text{ ft}$$

$$\frac{c}{\sin 48^\circ} = \frac{4}{\sin 17^\circ}$$

$$c = 10.2 \text{ ft}$$

b)



$$\frac{\sin B}{7} = \frac{\sin 26^\circ}{5}$$

$$\sin B = 0.6137$$

$$B = 38^\circ$$

$$C = 180 - 38 - 26$$

$$C = 116^\circ$$

or $B = 180 - 38$

$$B = 142^\circ$$

$$\therefore C = 180 - 142 - 26$$

$$C = 12^\circ$$

$$\frac{c}{\sin 12^\circ} = \frac{5}{\sin 26^\circ}$$

$$c = 2.4 \text{ m}$$

(9.) $\csc 34^\circ = \frac{r}{16}$

$$r = \frac{16}{\sin 34^\circ} = 28.6 \text{ ft}$$

