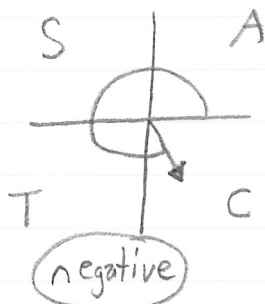
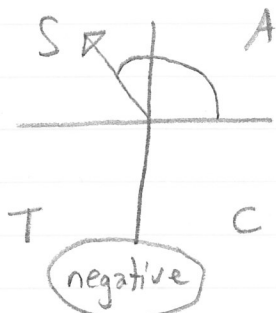


Exam Review: Trigonometric Functions

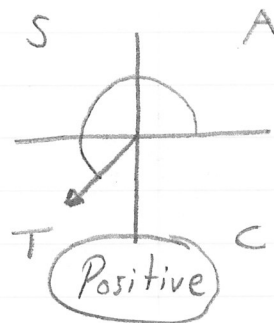
1. a) $\sin(300^\circ)$



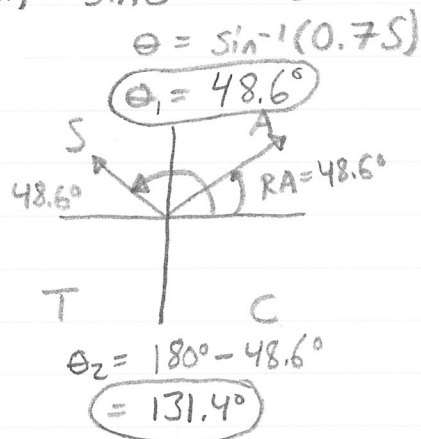
b) $\cos(120^\circ)$



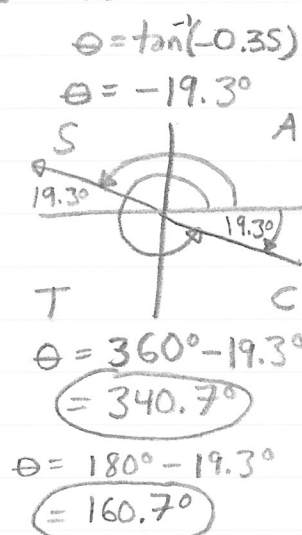
c) $\tan(230^\circ)$



2. a) $\sin \theta = 0.75$



b) $\tan \theta = -0.35$



c) $\cos \theta = 1.5$

$\theta = \cos^{-1}(1.5)$
Error!
 $\cos \theta$ cannot equal 1.5 since $\cos \theta$ can only equal values between -1 and 1.
No solⁿ

3. a) If $\theta = 150^\circ$

$\theta_2 = 150^\circ + 360^\circ$
 $= 510^\circ$

$\theta_3 = 150^\circ - 360^\circ$
 $= -210^\circ$

b) $\theta = 240^\circ$

$\theta_2 = 240^\circ + 360^\circ$
 $= 600^\circ$

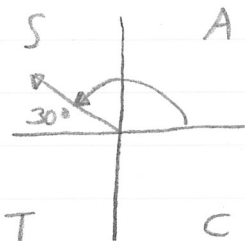
$\theta_3 = 240^\circ - 360^\circ$
 $= -120^\circ$

4. a) $\cos(150^\circ)$

$= -\cos(30^\circ)$



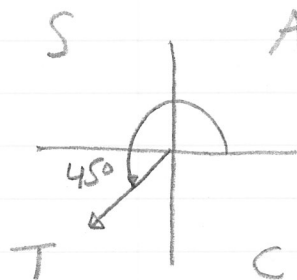
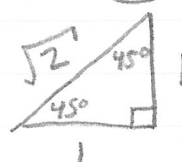
$= -\frac{\sqrt{3}}{2}$



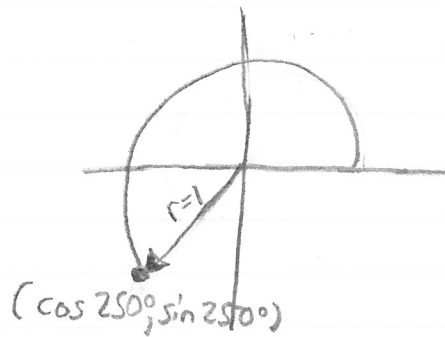
b) $\sin(225^\circ)$

$= -\sin(45^\circ)$

$= -\frac{1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$



5.



$$x = \cos(250^\circ)$$

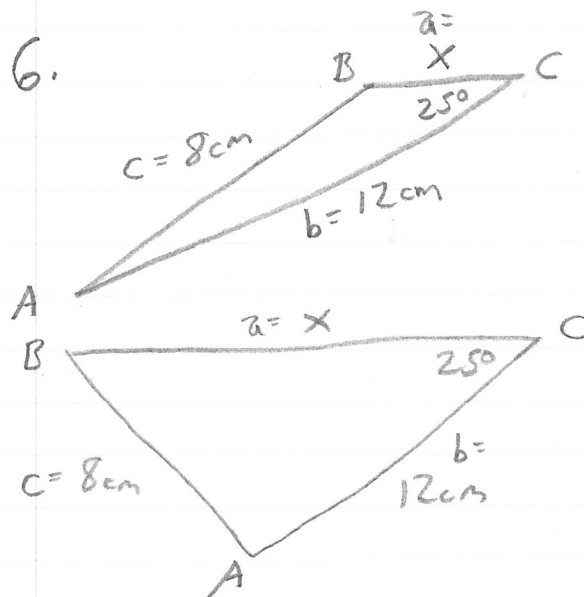
$$y = \sin(250^\circ)$$

$$x = -0.34$$

$$y = -0.94$$

The point on the unit circle has coordinates $(-0.34, -0.94)$

6.



Ambiguous Case!

$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$8^2 = x^2 + 12^2 - 2(x)(12) \cos(25^\circ)$$

$$64 = x^2 + 144 - 21.75x$$

$$0 = x^2 - 21.75x + 144 - 64$$

$$0 = x^2 - 21.75x + 80$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{21.75 \pm \sqrt{(21.75)^2 - 4(1)(80)}}{2(1)}$$

$$= \frac{21.75 \pm \sqrt{473.0625 - 320}}{2}$$

$$= \frac{21.75 \pm 12.37}{2}$$

$$x \approx 17.1 \text{ cm} \quad \text{or} \quad x \approx 4.7 \text{ cm}$$