

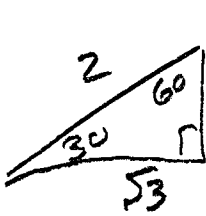
Math 113 Thurs. 3-14-13 Class Notes

(40)

Pg 250

$1 - \sqrt{3}i$ Convert To Polar

$$\text{MODULUS} \Rightarrow \sqrt{(1)^2 + (-\sqrt{3})^2} = 2$$



$$\theta' = \tan^{-1}\left(\frac{\sqrt{3}}{1}\right) = 60^\circ \quad \text{QUAD IV}$$

$$\theta = 300^\circ$$

$$(2, 300^\circ) \quad \text{or} \quad (2, -60^\circ)$$

$$\Rightarrow \boxed{2 \text{cis } 300^\circ \quad \text{or} \quad 2 \text{cis } (-60^\circ)}$$

(49)

PS251

 $4.5 \text{cis } 35^\circ$ Convert to rectangular

$$4.5 \cos 35^\circ + 4.5 \sin 35^\circ i$$

$$4.5(-.8192) + 4.5(.5736) i$$

$$3.69 + 2.58 i$$

$$\boxed{3.7 + 2.6 i}$$

(59)

P5251

$$\sqrt{10} \operatorname{cis} 180$$

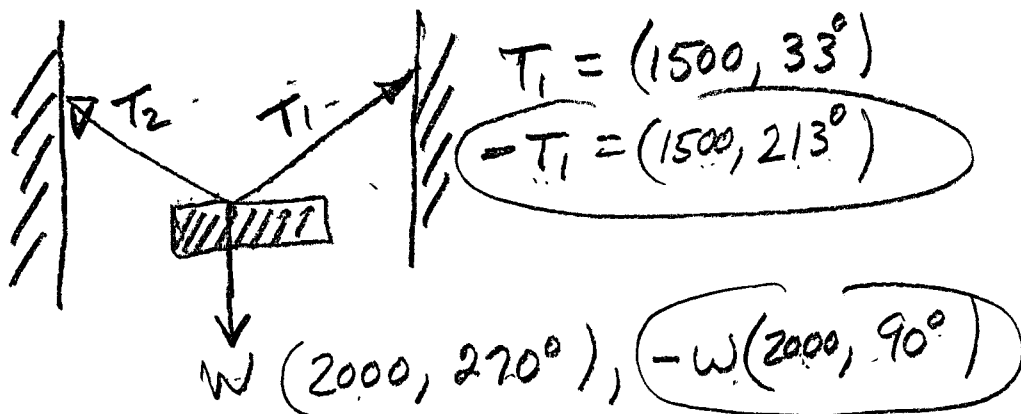
EXACT

$$\sqrt{10} \cos(180^\circ) + \sqrt{10} \sin(180^\circ) i$$

$$(\sqrt{10})(-1) +$$

$$\boxed{-\sqrt{10} + 0i}$$

72
Pg 236



$$T_1 + T_2 + W = 0$$

$$T_2 = -W + -T_1$$

$$-W_x = 2000 \cos 90^\circ = 0$$

$$-T_{1x} = 1500 \cos 213^\circ = -1258.01$$

$$T_{2x} = -1258.01$$

$$-W_y = 2000 \sin 90^\circ = 2000$$

$$-T_{1y} = 1500 \sin 213^\circ = -816.96$$

$$T_{2y} = 1183.04$$

$$T_2(-1258, 1183)$$

$$|T_2| = \sqrt{(-1258)^2 + (1183)^2} = 1726.86$$

$$\theta' = \tan^{-1}\left(\frac{1183}{-1258}\right) = 43.24^\circ \Rightarrow 180 - \theta' = 136.76^\circ$$

$$T_2(1727, 137^\circ)$$