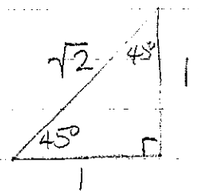
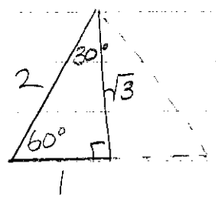
Pre Calculus Math 11

p. 83 part 2 # 8-17

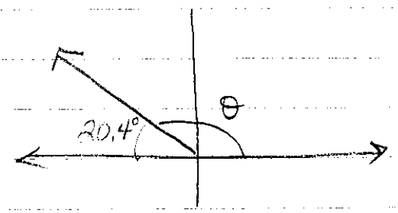
8.

θ	$\sin\theta$	$\cos\theta$	$\tan\theta$
$30°$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{3}}$
$45°$	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{1} = 1$
$60°$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{1} = \sqrt{3}$





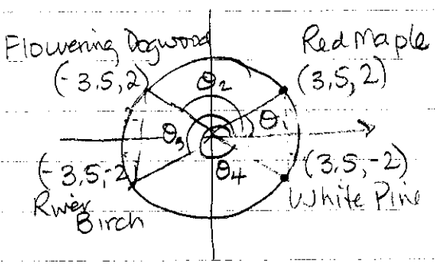
9.



$\theta = 180° - 20.4°$

$= 159.6°$

10.



a) See the diagram

b) $\tan\theta_1 = \frac{2}{3.5}$

$\tan\theta_1 = 0.5714286$

$\theta_1 = 29.74488$

$\theta_1 = 30°$

$\theta_2 = 180° - 30°$

$\theta_2 = 150°$

$\theta_3 = 180° + 30°$

$\theta_3 = 210°$

$\theta_4 = 360° - 30°$

$\theta_4 = 330°$

c) 4 squares from 2 to -2

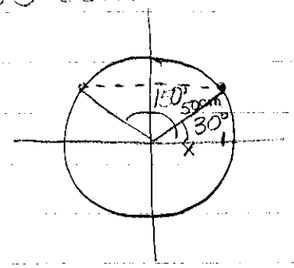
each square is 10 m

so

$4 \cdot 10 = 40$ m

p.83 cont.

11.



$\cos 30° = \frac{x}{50}$

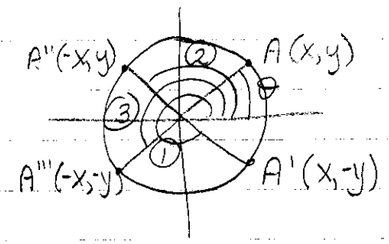
$\frac{\sqrt{3}}{2} = \frac{x}{50}$

$50\sqrt{3} = 2x$

$25\sqrt{3} = x$

the distance is $2x$ so $2(25\sqrt{3}) = 50\sqrt{3}$

12.



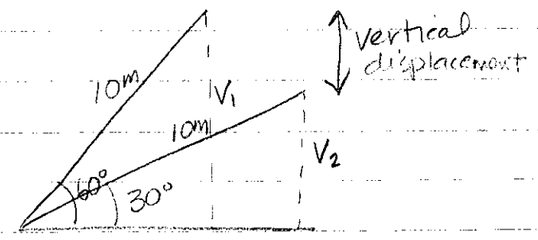
a) see diagram

b) ① $\angle A'OC = 360° - \theta$

② $\angle A''OC = 180° - \theta$

③ $\angle A'''OC = 180° + \theta$

13.



$\sin 60° = \frac{V_1}{10}$ $\qquad$ $\sin 30° = \frac{V_2}{10}$

$\frac{\sqrt{3}}{2} = \frac{V_1}{10}$ $\qquad$ $\frac{1}{2} = \frac{V_2}{10}$

$10\sqrt{3} = 2V_1$ $\qquad$ $10 = 2V_2$

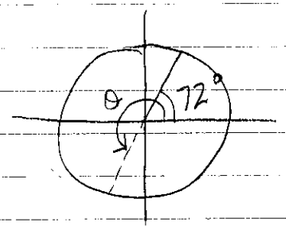
$5\sqrt{3} = V_1$ $\qquad$ $5 = V_2$

$8.66025 = V_1$

vertical displacement $= 8.66025 - 5$

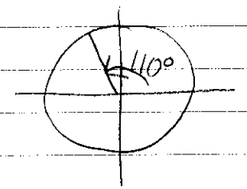
$= 3.66$

p. 83 cont.

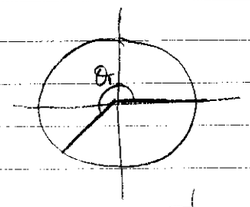
14. 

$\theta = 180° + 72°$

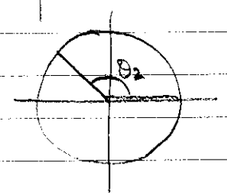
$\theta = 252°$

15. 

Cu, Ag, Au, or Uuu

16. a) 

$\theta_1 = \frac{12}{20}(360°) = 216°$

b) 

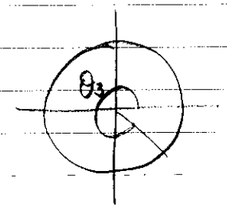
reference angle for 216° =
$216° - 180° = 36°$

$\theta_2 = 180° - 36° = 144°$

so $144° = \frac{n}{20}(360°)$

$2880 = 360n$

$8 = n$ 8 days

c) 

$\theta_3 = 360° - 36°$

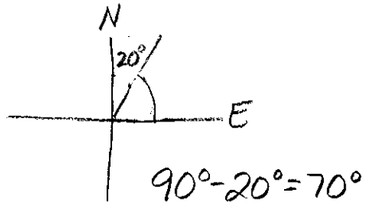
$\theta_3 = 324°$

$324° = \frac{n}{20}(360°)$

$6480 = 360n$

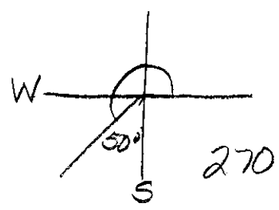
$18 = n$ 18 days

17. a) N 20° E



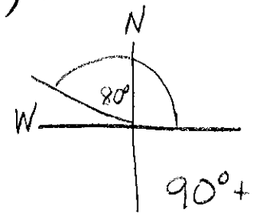
$90° - 20° = 70°$

b) S 50° W



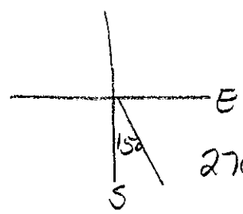
$270° - 50° = 220°$

c) N 80° W



$90° + 80° = 170°$

d) S 15° E



$270° + 15° = 285°$