

Algebra 2 and Trig Lesson 57B

Aim: How do we find the measure of an angle?

HW: Page 391 # 8-40(even #s),41,42,43
Page 385 # 60,62

Do now: Find the correct measure of the angle when the trig function is:

- 1) $\cos \theta = -1/2$ 1) 120°
- 2) $\sin \theta = -0.93969$ 2) 250°
- 3) $\tan \theta = -0.8391$ 3) 140°
- 4) If $\sin \theta = -0.7424$, find the nearest degree two positive values of θ that are less than 360° .
4) 228° and 312°
- 5) Find the reference angle when $\tan \theta = 1.19175$
5) 50°

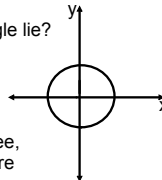
To find these angles you are using the arcsine, arccosine or arctangent which is found using the inverse sign of trig function found on the calculator.

arcsine = $\arcsin = \sin^{-1}$
arccosine = $\arccos = \cos^{-1}$
arctangent = $\arctan = \tan^{-1}$

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intersects the unit circle at the point (0.28, -0.96)

a) In what quadrant does the terminal side of the angle lie?



0.28, -0.96

b) Find, to the nearest degree, the smallest positive measure of the angle?

$\cos \theta = .28 = 74^\circ$

$\sin \theta = -0.96 = -74^\circ$

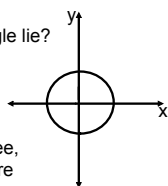
$360^\circ - 74^\circ = 286^\circ$

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The terminal side of an angle in standard position intersects the unit circle at the point (-0.6428, -0.7660)

a) In what quadrant does the terminal side of the angle lie?

III



b) Find, to the nearest degree, the smallest positive measure of the angle?

230°

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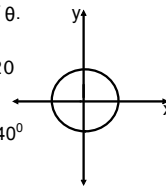
For each function value, if $0^\circ \leq \theta < 360^\circ$, find, to the nearest degree, two values of θ .

1. $\sin \theta = 0.3420$

$\sin \theta = -0.3420$

20° and 160°

200° and 340°



2. $\cos \theta = .6283$

5. $\tan \theta = -8.7525$

51° and 309°

97° and 277°

3. $\tan \theta = 1.4281$

6. $\cos \theta = -.5075$

55° and 235°

120° and 240°

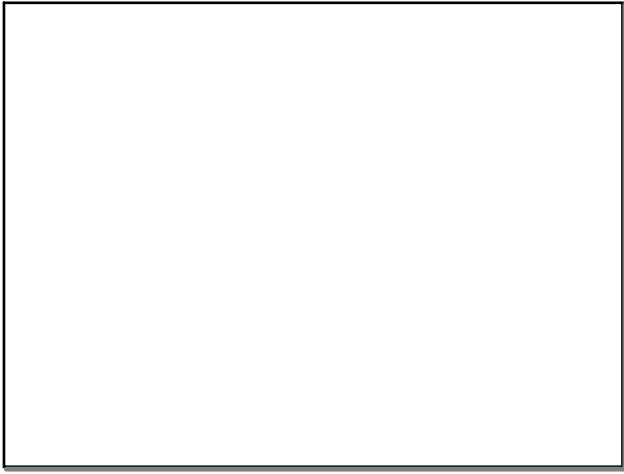
4. $\sin \theta = -0.0523$

7. $\cos \theta = 0$

183° and 357°

90° and 270°

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