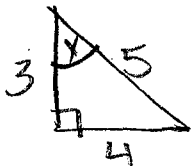


Name: Key

- 1) The lengths of the sides of a right triangle are 3, 4, and 5. What is the value of the sine of the larger acute angle of the triangle?

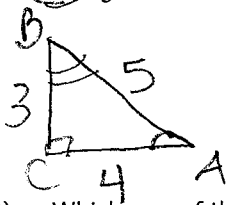
- A) $\frac{4}{5}$ B) $\frac{3}{4}$ C) $\frac{5}{4}$ D) $\frac{3}{5}$



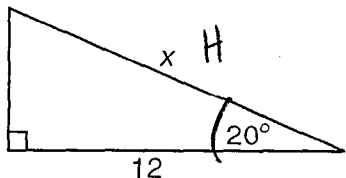
$\sin X = \frac{4}{5}$

- 2) In right triangle ABC, if $m\angle C = 90^\circ$ and $\sin A = \frac{3}{5}$, $\cos B$ is equal to

- A) $\frac{3}{5}$ B) $\frac{4}{5}$ C) $\frac{3}{4}$ D) $\frac{4}{3}$

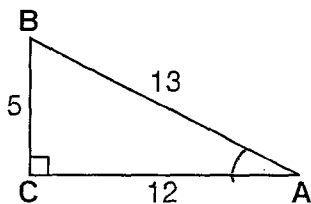


- 3) Which one of the following equations can be used to find the value of x in the right triangle shown below?



- A) $\sin 20^\circ = \frac{12}{x}$ B) $\cos 20^\circ = \frac{x}{12}$
 C) $\cos 20^\circ = \frac{12}{x}$ D) $\cos 70^\circ = \frac{x}{12}$

- 4) In the accompanying diagram of right triangle ABC, $AC = 12$, $AB = 13$, and $BC = 5$.



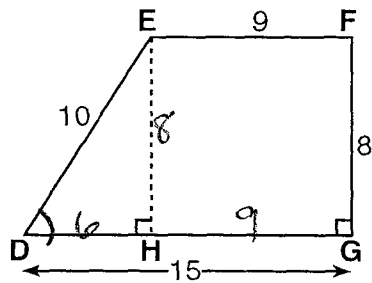
What is the value of $\sin A - \cos A$?

- A) $-\frac{17}{13}$ B) $\frac{17}{13}$ C) $-\frac{7}{13}$ D) $\frac{7}{13}$

- 5) What value of x satisfies the equation $\sin 40^\circ = \cos x$? comps.

- A) 40° B) 80° C) 50° D) 20°

- 6) In the accompanying diagram, altitude \overline{EH} is drawn in trapezoid DEFG, $DE = 10$, $EF = 9$, $FG = 8$, and $GD = 15$.



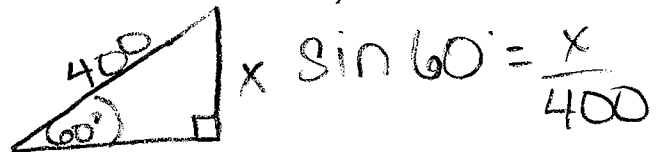
What is $m\angle D$ to the nearest degree?

- A) 80° B) 53° C) 37° D) 60°

$\sin(\sin D) = \frac{8}{10}$

- 7) The straight string of a kite makes an angle of elevation from the ground of 60° . The length of the string is 400 feet. What is the best approximation of the height of the kite?

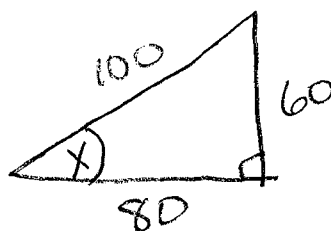
- A) 350 ft B) 300 ft C) 200 ft D) 250 ft



$x \sin 60^\circ = \frac{x}{400}$

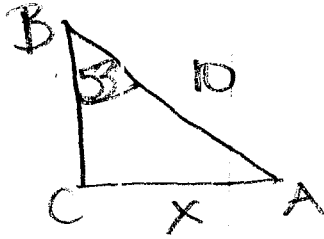
- 8) A 100-foot wire is extended from the ground to the top of a 60-foot pole, which is perpendicular to the level ground. To the nearest degree, what is the measure of the angle that the wire makes with the ground?

- A) 37 B) 53 C) 31 D) 59



$\tan x = \frac{60}{80}$

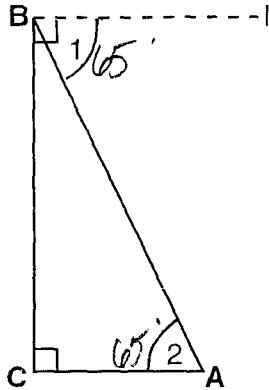
- 9) In right triangle ABC, hypotenuse AB = 10 and $m\angle B = 53^\circ$. Find AC to the nearest integer.



$$\sin 53^\circ = \frac{x}{10}$$

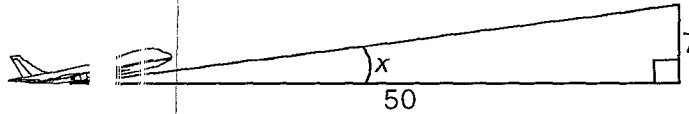
$$x = 8$$

- 10) In the accompanying diagram of $\triangle ABC$, the BD is drawn. The measure of $\angle 1$ (the angle of depression) is 65° . Find the measure, in degrees, of $\angle 2$ (the angle of elevation).



alt.
int. 45

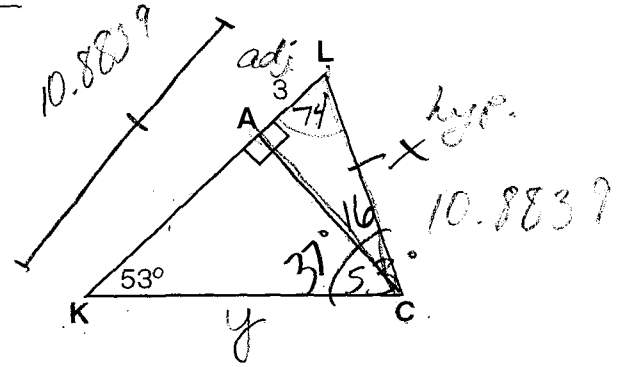
- 12) In the accompanying diagram, the slope of the ascent of an aircraft is $\frac{7}{50}$. Find $m\angle x$, the angle of elevation, to the nearest degree.



$$\tan x = \frac{7}{50}$$

$$x = 8^\circ$$

- 11) In the accompanying diagram of isosceles triangle KLC, $LK \cong LC$, $m\angle K = 53^\circ$, altitude CA is drawn to leg LK, and LA = 3. Find the perimeter of $\triangle KLC$ to the nearest integer.



$$\cos 74^\circ = \frac{3}{x}$$

$$x \cos 74^\circ = 3$$

$$x = \frac{3}{\cos 74^\circ}$$

$$x = 10.8839$$

LOS:

$$\frac{\sin 53^\circ}{10.8839} = \frac{\sin 74^\circ}{y}$$

$$y \sin 53^\circ = 10.8839 \sin 74^\circ$$

$$y = \frac{10.8839 \sin 74^\circ}{\sin 53^\circ}$$

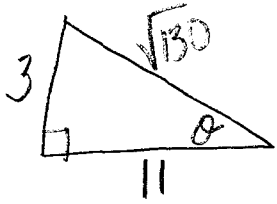
$$y = 13.100$$

$$34.86$$

$$35$$

Pg. 335-6 # 15, 19, 23, 45, 46, 62

(15) $\cot \theta = \frac{11}{3}$ $\tan \theta = \frac{3}{11}$



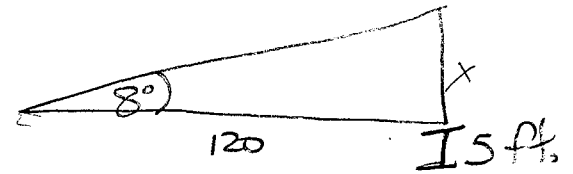
$$\sin \theta = \frac{3}{\sqrt{130}} \quad \sec \theta = \frac{\sqrt{130}}{3}$$

$$\cos \theta = \frac{11}{\sqrt{130}} \quad \sec \theta = \frac{\sqrt{130}}{11}$$

$$3^2 + 11^2 = c^2$$
$$9 + 121 = c^2$$
$$\sqrt{130} = \sqrt{c^2}$$

(19) $\sin\left(\frac{\pi}{3}\right) = \frac{\sqrt{3}}{2}$

(62)



$$\tan 8^\circ = \frac{x}{120}$$

$$x = 16.8649$$
$$+ 5$$

$$\boxed{21.8649 \text{ ft.}}$$

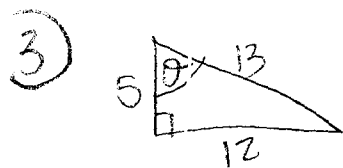
(3) $\cos\left(\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{2}}$

(45) $\sec \theta = 2$
 $\cos \theta = \frac{1}{2}$

$$\theta = 60^\circ$$
$$\theta = \frac{\pi}{3}$$

(2) $\cot \theta = 1$
 $\tan \theta = 1$

$$\theta = 45^\circ$$
$$\theta = \frac{\pi}{4}$$

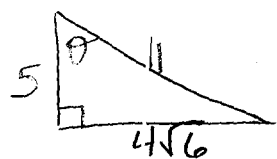


$$\sin \theta = \frac{12}{13} \quad \csc \theta = \frac{13}{12}$$

$$\cos \theta = \frac{5}{13} \quad \sec \theta = \frac{13}{5}$$

$$\tan \theta = \frac{12}{5} \quad \cot \theta = \frac{5}{12}$$

1) $\cos \theta = \frac{5}{11} \quad \sec \theta = \frac{11}{5}$



$$\sin \theta = \frac{4\sqrt{6}}{11} \quad \csc \theta = \frac{11}{4\sqrt{6}}$$

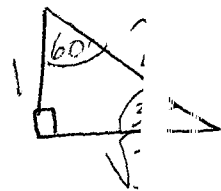
$$5^2 + b^2 = 11^2$$

$$25 + b^2 = 121 \quad \tan \theta = \frac{\sqrt{6}}{5}$$

$$\sqrt{b^2} = \sqrt{96}$$

$$\cot \theta = \frac{5}{4\sqrt{6}}$$

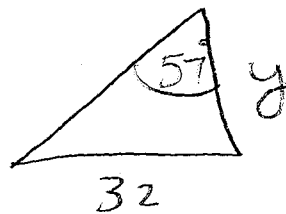
42) $\sin \theta = \frac{\sqrt{3}}{2}$



$$\theta = 60^\circ \cdot \frac{\pi}{180}$$

$$\theta = \frac{\pi}{3}$$

51



$$\tan 57^\circ = \frac{32}{y}$$

$$y \tan 57^\circ = 32$$

$$\frac{y \tan 57^\circ}{\tan 57^\circ} = \frac{32}{\tan 57^\circ}$$

$$y = 20.78$$

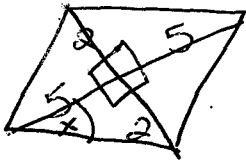
Name Key

Right Triangle Trig Practice

Date _____

Use SohCahToa to diagram and answer the following:

1. A rhombus has diagonals of length 4 and 10. Find all angles of the rhombus to the nearest degree.

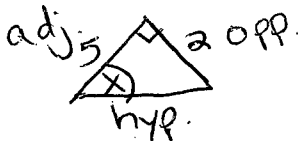


$$\tan x = \frac{2}{5}$$

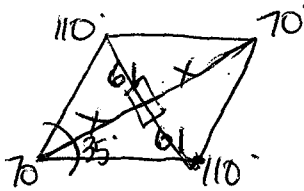
$$x = 21.8014 \times 2 = 43.6028$$

$$\boxed{44^\circ, 44^\circ, 136^\circ, 136^\circ}$$

$$360 - 88 = 272 \div 2 = 136$$



2. The shorter diagonal of a rhombus with a 70 degree angle is 122cm long. How long, to the nearest cm is the longer diagonal?



$$\tan 35^\circ = \frac{61}{x}$$

$$x \tan 35 = 61$$

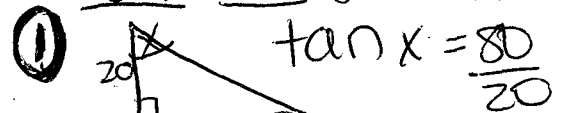
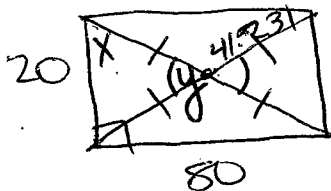
$$\boxed{174}$$



$$\tan 35$$

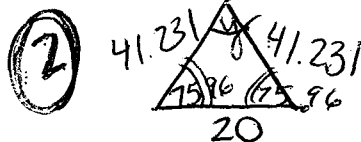
$$x = 87.117 \times 2 = 174.234$$

3. A rectangle is 80 cm long and 20cm wide. Find, to the nearest degree, the acute angle formed at the intersection of the diagonals.



$$\tan x = \frac{80}{20}$$

$$x = 75.9638$$



$$180 - 75.96 - 75.96 \approx 28^\circ$$

$$20^2 + 80^2 = c^2$$

$$\sqrt{6800} = \sqrt{c^2}$$

$$c = 84.462 \div 2 = 41.231$$

$$\frac{20}{41.231} = \frac{\sin 75.96}{\sin y}$$

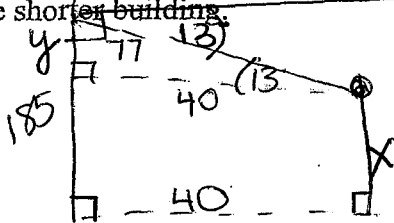
$$41.231 \sin y = 20 \sin 75.96$$

$$\sin y = 47$$

$$y = 28.07$$

$$\boxed{28^\circ}$$

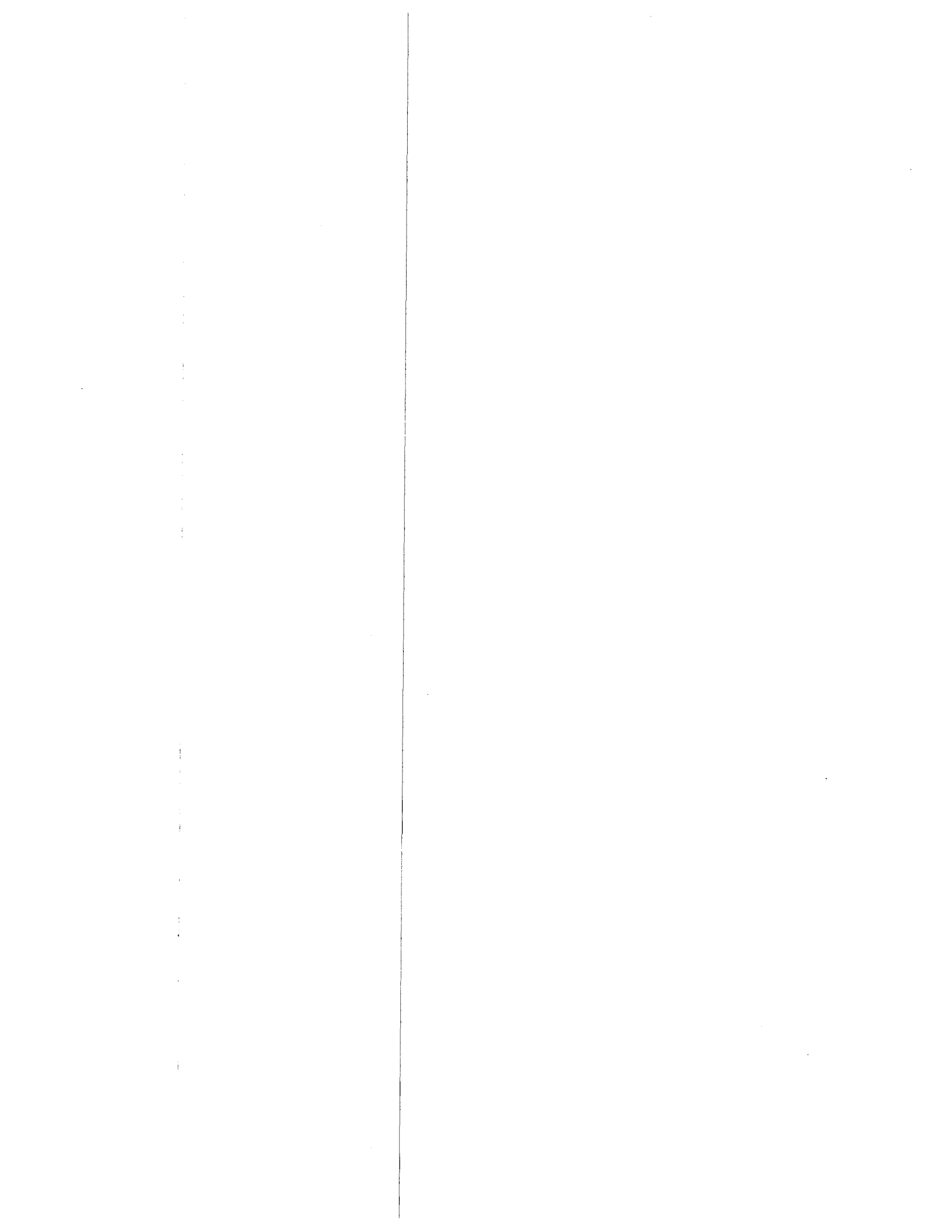
4. Two buildings on opposite sides of a street are 40 meters apart. From the top of the taller building, which is 185 m high, the angle of depression to the top of the shorter building is 13°. Find the height of the shorter building.



$$\tan 13^\circ = \frac{y}{40}$$

$$y = 9.2347$$

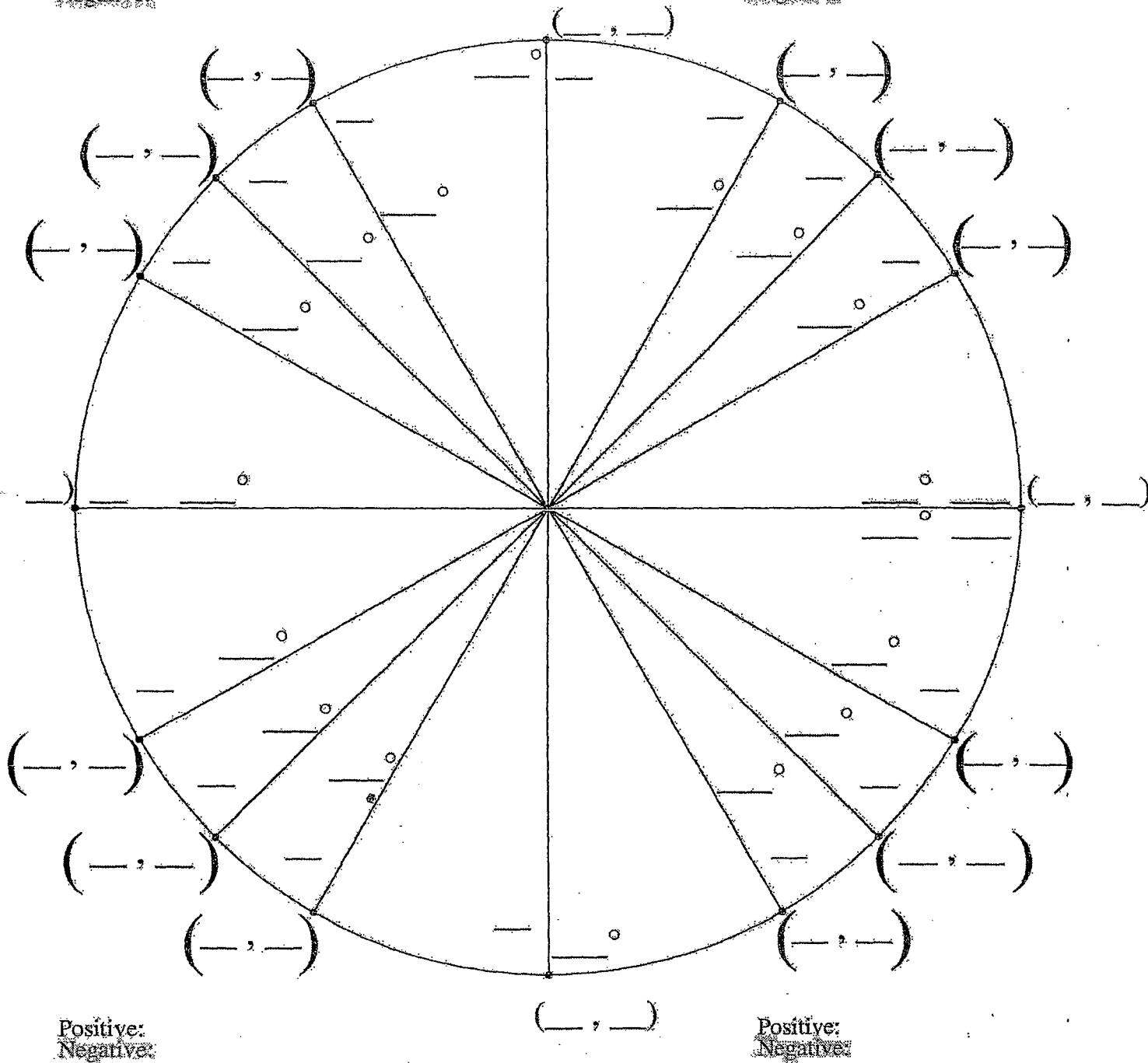
$$185 - 9.2347 = \boxed{175.765}$$



Fill in The Unit Circle

Positive:
Negative:

Positive:
Negative:



Positive:
Negative:

Positive:
Negative:

EmbeddedMath.com

Student Name: 610

Score: _____

HW

Find the exact value of a given trigonometric ratio

$$\sin \frac{\pi}{2} = 1$$

$$\cos \frac{\pi}{2} = 0$$

$$\tan \frac{\pi}{6} = \frac{1}{\sqrt{3}}$$

$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

$$\cot 0 = \text{und.}$$

$$\sec \frac{\pi}{4} = \sqrt{2}$$

$$\csc \frac{\pi}{6} = \frac{2}{1}$$

$$\tan \frac{\pi}{2} = \text{und.}$$

$$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}}$$

$$\cos \frac{\pi}{3} = \frac{1}{2}$$

$$\csc \frac{\pi}{4} = \sqrt{2}$$

$$\tan \frac{\pi}{4} = 1$$

$$\tan 0 = 0$$

$$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$$

$$\sec \frac{\pi}{2} = \text{und.}$$

$$\cot \frac{\pi}{2} = 0$$

$$\csc \frac{\pi}{3} = \frac{2}{\sqrt{3}}$$

$$\sin \frac{\pi}{6} = \frac{1}{2}$$

$$\sec \frac{\pi}{6} = \frac{2}{\sqrt{3}}$$

$$\tan \frac{\pi}{3} = \sqrt{3}$$

$$\csc \frac{\pi}{2} = 1$$

$$\cot \frac{\pi}{4} = 1$$

$$\sec \frac{\pi}{3} = 2$$

$$\cot \frac{\pi}{6} = \sqrt{3}$$

Tues.

Name: Key

The Unit Circle

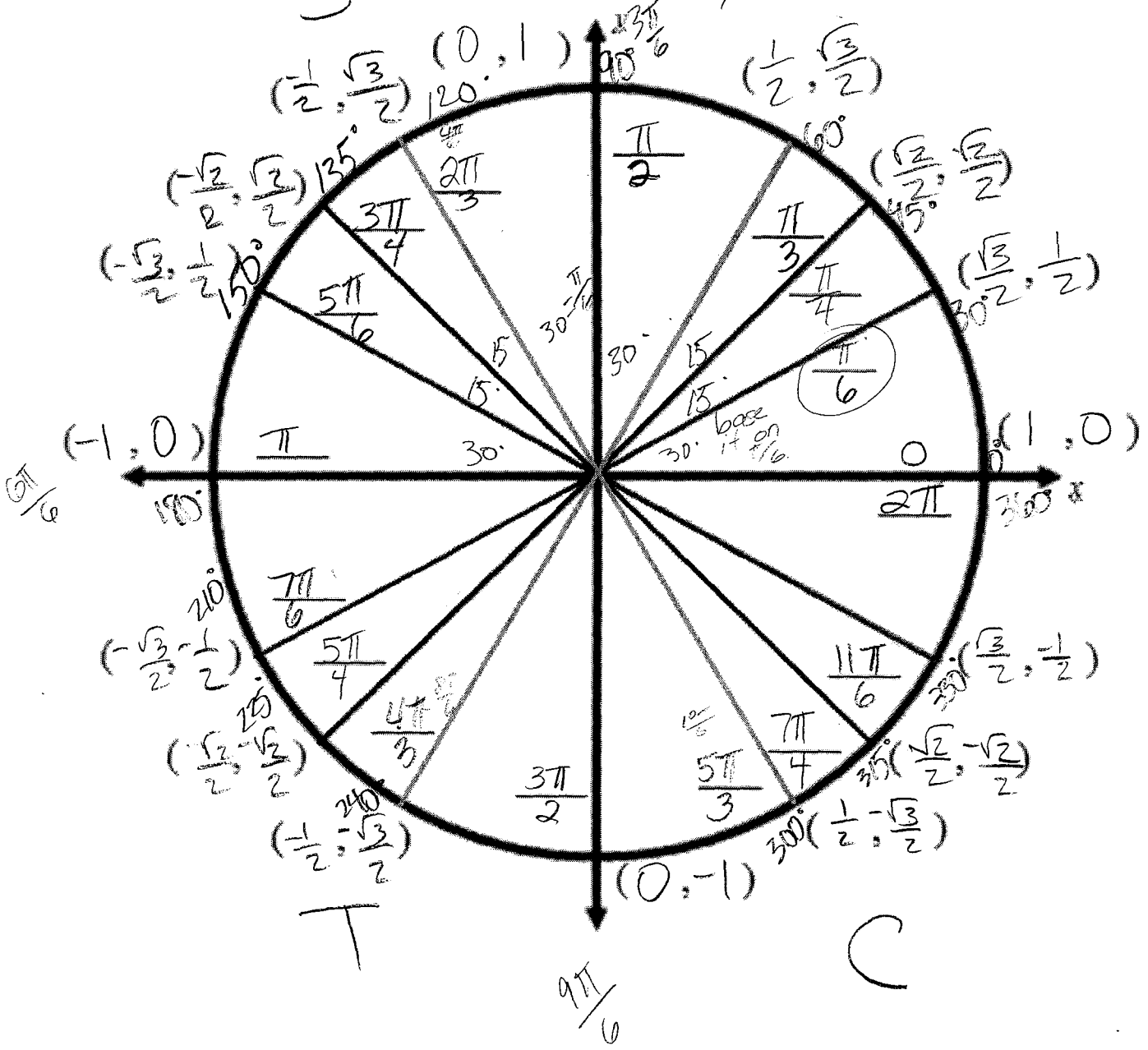
$$x = \cos \theta$$

$$y = \sin \theta$$

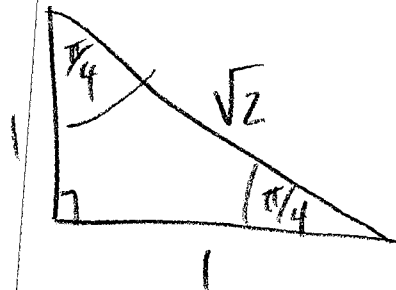
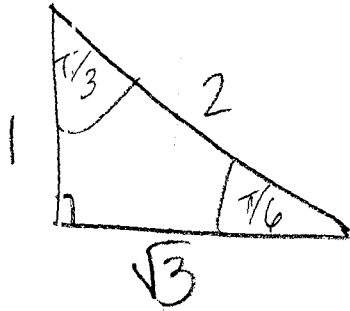
Just a reflection
←

S

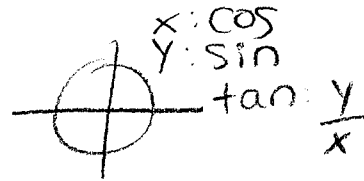
A



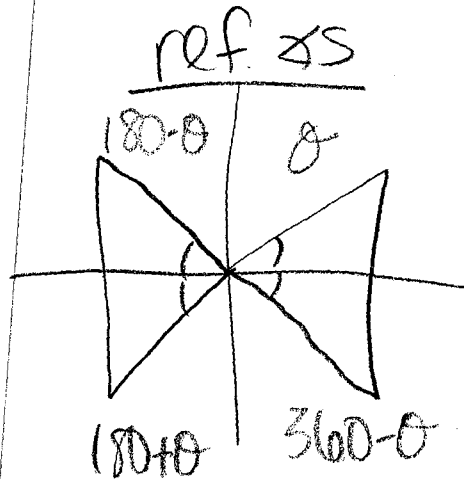
Basics



Unit Circle



S	A
T	C



Reciprocals

$$\sin \theta \rightarrow \csc \theta$$

$$\cos \theta \rightarrow \sec \theta$$

$$\tan \theta \rightarrow \cot \theta$$

Do Now

Convert to degrees: 3 radians:

$$3 \cdot \frac{180}{\pi} = \frac{540}{\pi} \approx 171.9^\circ$$

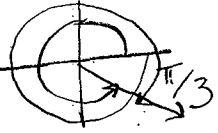
Trigonometry.

For each angle, find all coterminal angles, θ such that $-2\pi < \theta < 2\pi$. Then, if it exists, write the corresponding reference angle.

odds

1. $-7\pi/3$

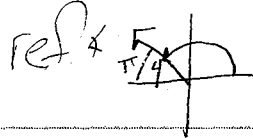
$$-\frac{7\pi}{3} + \frac{2\pi \cdot 3}{1 \cdot 3} = \boxed{-\frac{\pi}{3} + \frac{6\pi}{3} = \frac{5\pi}{3}}$$



2. $22\pi/8$

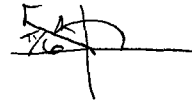
$$\frac{22\pi}{8} - \frac{16\pi}{8} = \frac{6\pi}{8} = \frac{3\pi}{4}$$

$$\frac{6\pi}{8} - \frac{16\pi}{8} = \frac{-10\pi}{8} = -\frac{5\pi}{4}$$



3. $-19\pi/6$

$$-\frac{19\pi}{6} + \frac{12\pi}{6} = \boxed{-\frac{7\pi}{6}} + \frac{2\pi}{6} = \frac{5\pi}{6}$$



4. $9\pi/4$

$$\frac{9\pi}{4} - \frac{8\pi}{4} = \frac{\pi}{4}$$

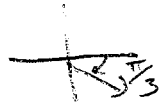
ref $\angle = \frac{\pi}{4}$

*2pi + 8pi/4 = 10pi/4
10pi/4 - pi/4 = 9pi/4*

5. $-\pi/3$

$$-\frac{\pi}{3} + \frac{6\pi}{3} = \frac{5\pi}{3}$$

ref $\angle = \frac{\pi}{3}$



6. -7π

$$-7\pi + 2\pi = -5\pi + 2\pi = -3\pi + 2\pi = -\pi + 2\pi = \pi$$

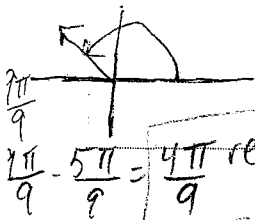
NO REF. \angle



7. $23\pi/9$

$$\frac{23\pi}{9} - \frac{18\pi}{9} = \frac{5\pi}{9}$$

$$\frac{5\pi}{9} - \frac{18\pi}{9} = \frac{-13\pi}{9}$$

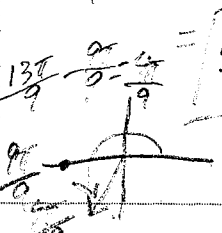


8. $-23\pi/9$

$$-\frac{23\pi}{9} + \frac{18\pi}{9} = \frac{-5\pi}{9} + \frac{16\pi}{9} = \frac{11\pi}{9}$$

$$\frac{11\pi}{9} - \frac{18\pi}{9} = \frac{-7\pi}{9}$$

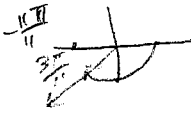
$$\frac{-7\pi}{9} + \frac{12\pi}{9} = \frac{5\pi}{9}$$



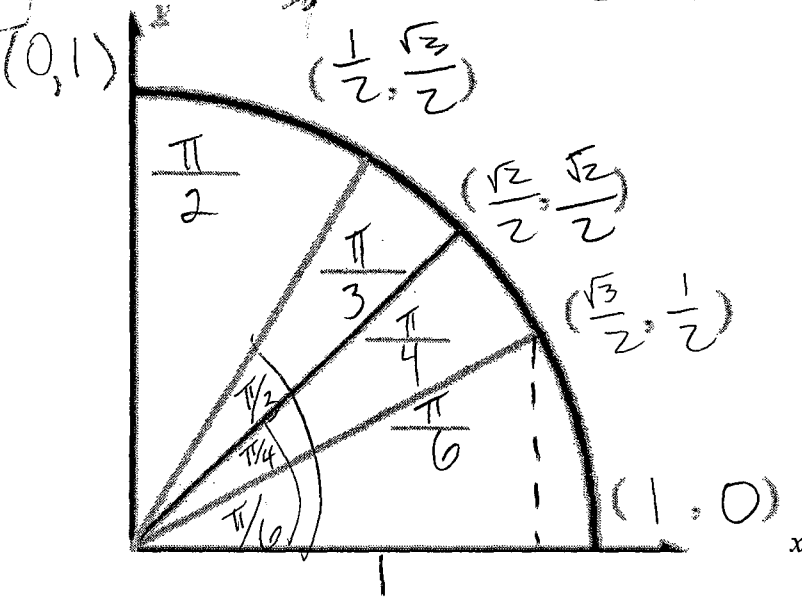
9. $58\pi/11$

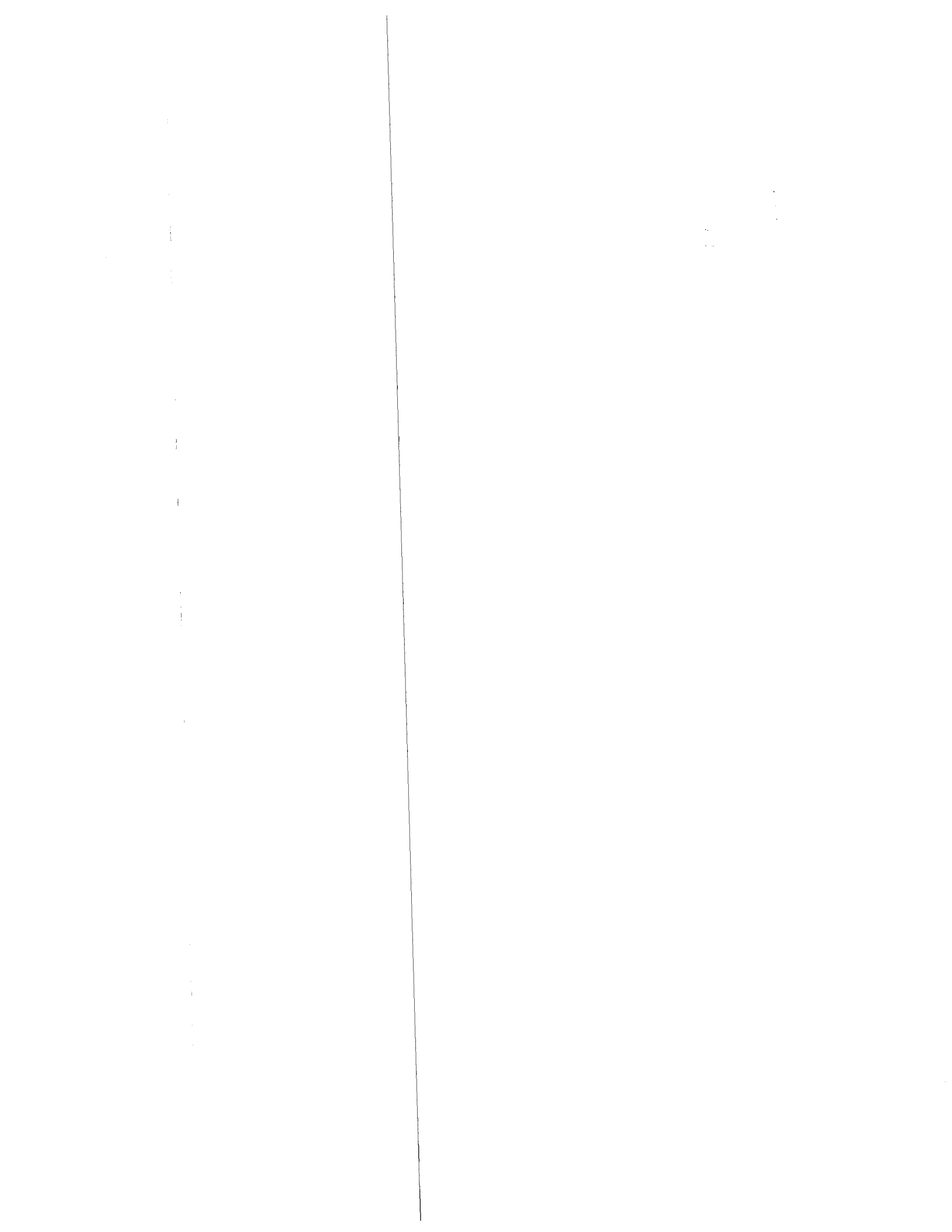
$$\frac{58\pi}{11} - \frac{22\pi}{11} = \frac{36\pi}{11} - \frac{22\pi}{11} = \frac{14\pi}{11}$$

$$\frac{14\pi}{11} - \frac{22\pi}{11} = \frac{-8\pi}{11}$$



ref $\angle = \frac{3\pi}{11}$



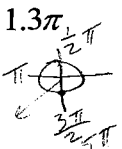


COPY

Name Key Non Calc Trig Practice Date _____

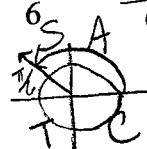
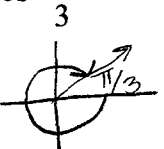
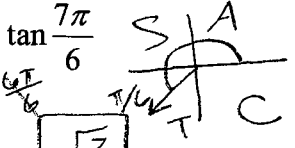
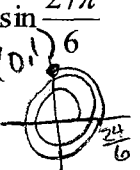
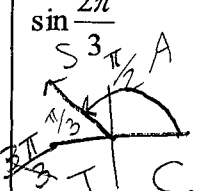
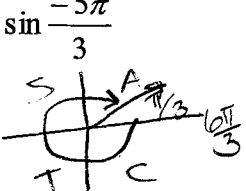
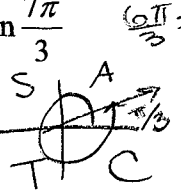
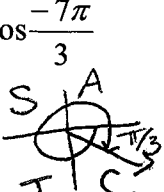
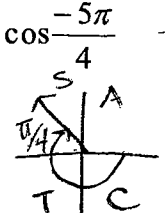
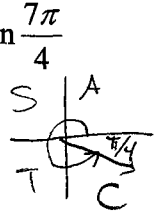
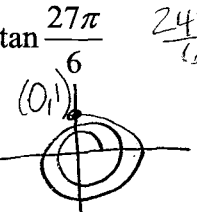
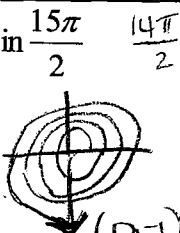

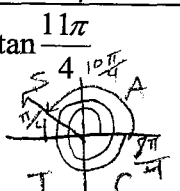
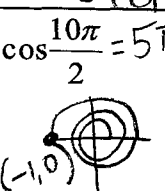
Mrs. Dounias

1. Name that quadrant!!

$\frac{37\pi}{6}$ $\frac{36\pi}{6} = 6\pi$ $\frac{\pi}{6}$ I 3 cycles	$\frac{7\pi}{3}$ $\frac{6\pi}{3} = 2\pi$ $\frac{\pi}{3}$ I 1 cycle $\text{Ref} = \frac{\pi}{3}$	$\frac{-7\pi}{3}$ $-\frac{\pi}{3}$ IV	$\frac{11\pi}{6}$ $\frac{12\pi}{6} = 2\pi$ IV
1.3π  III	$\frac{2}{3}\pi$ II	2.3π I	$\frac{\pi}{5}$ I

2. Name 3 angles of rotation in Radians, which terminate on the Y axis: $\frac{\pi}{2}$ $\frac{3\pi}{2}$ $\frac{5\pi}{2}$

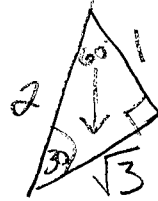
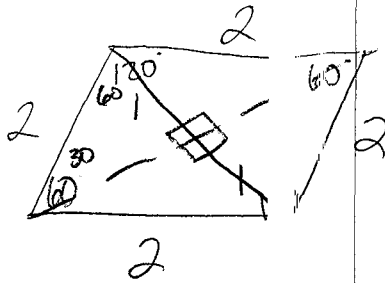
3. Find the exact value of each:

$\cos \frac{17\pi}{6}$ $\frac{18\pi}{6} = 3\pi$  $-\frac{\sqrt{3}}{2}$	$\cos \frac{-5\pi}{3}$  $\frac{1}{2}$	$\tan \frac{7\pi}{6}$  $\frac{\sqrt{3}}{3}$
$\sin \frac{27\pi}{6}$  1	$\sin \frac{2\pi}{3}$  $\frac{\sqrt{3}}{2}$	$\sin \frac{-5\pi}{3}$  $\frac{\sqrt{3}}{2}$
$\tan \frac{7\pi}{3}$ $\frac{6\pi}{3} = 2\pi$  $\sqrt{3}$	$\cos \frac{-7\pi}{3}$  $\frac{1}{2}$	$\cos \frac{-5\pi}{4}$ $-\frac{4\pi}{4}$  $-\frac{\sqrt{2}}{2}$
$\tan \frac{7\pi}{4}$  -1	$\tan \frac{27\pi}{6}$ $\frac{24\pi}{6} = 4\pi$ $\frac{3\pi}{6} = \frac{\pi}{2}$  undef.	$\sin \frac{15\pi}{2}$ $\frac{14\pi}{2} = 7\pi$  -1
$\cos \frac{17\pi}{2}$ $(0,1)$  0	$\tan \frac{11\pi}{4}$ 10π  -1	$\cos \frac{10\pi}{2} = 5\pi$  -1

4.

a. A rhombus with sides of length 2 and angles of 120 and 60 is drawn. If the shorter diagonal has a length of 2,

Draw and label the diagram.



b. Find the length of the long diagonal.

$$\sqrt{3} + \sqrt{3} = 2\sqrt{3}$$

co-terminal

are in st position that have same terminal side

$$\pm 360$$

$$\pm 2\pi$$

Bonus:

Keep up with the Skills!

Factor each for +.5

1.

2.

3.

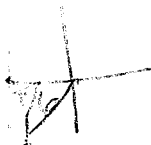
4.

Ref. x - positive, acute

made w/ x-axis

so always use $\pi/2\pi$

① $\frac{7\pi}{6}$

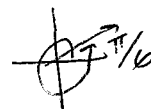


② $\frac{13\pi}{4}$

$\frac{12\pi}{4}$



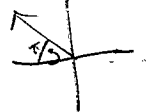
③ $\frac{13\pi}{6}$



$\frac{12\pi}{6} = 2\pi$

④ $\frac{8\pi}{3}$

$\frac{6\pi}{3} = 2\pi$



#3.2 on ditto

Key S/A
T/C

H-Pre-Calculus
Trig Values Worksheet

Quad. Evaluate each of the following -- exact values only. Do these without using your unit circle.

II 1. $\sin\left(\frac{5\pi}{6}\right) = \frac{1}{2}$

IV 2. $\cos\left(\frac{5\pi}{3}\right) = \frac{1}{2}$
 $\frac{6\pi}{3} = 2\pi$

II 3. $\sin\left(\frac{-5\pi}{4}\right) = \frac{\sqrt{2}}{2}$

II 4. $\cos\left(\frac{3\pi}{4}\right) = -\frac{\sqrt{2}}{2}$

IV 5. $\sin\left(\frac{11\pi}{3}\right) = -\frac{\sqrt{3}}{2}$
 $\frac{12\pi}{3} = 4\pi$

90° 6. $\cos\left(\frac{5\pi}{2}\right) = 0$
 $\frac{4\pi}{2} = 2\pi$
(0,1)

II 7. $\cos\left(\frac{-4\pi}{3}\right) = -\frac{1}{2}$

III 8. $\sin\left(\frac{-2\pi}{3}\right) = -\frac{\sqrt{3}}{2}$

IV 9. $\sin\left(\frac{15\pi}{4}\right) = -\frac{\sqrt{2}}{2}$
 $\frac{16\pi}{4}$

III 10. $\cos\left(\frac{7\pi}{6}\right) = -\frac{\sqrt{3}}{2}$

270° 11. $\sin\left(\frac{3\pi}{2}\right) = -1$
"y"

180° 12. $\cos(-\pi) = -1$
(-1,0)

III 13. $\tan\left(\frac{5\pi}{4}\right) = 1$

IV 14. $\tan\left(\frac{-\pi}{3}\right) = -\sqrt{3}$

III 15. $\tan\left(\frac{7\pi}{6}\right) = \frac{\sqrt{3}}{3}$

180° 16. $\tan(\pi) = 0$
 $\frac{y}{x} = \frac{0}{(-1)}$

II 17. $\tan\left(\frac{2\pi}{3}\right) = -\sqrt{3}$

90° 18. $\tan\left(\frac{\pi}{2}\right) = \text{und.}$
(0,1)

IV 19. $\tan\left(\frac{7\pi}{4}\right) = -1$

IV 20. $\tan\left(\frac{11\pi}{6}\right) = -\frac{\sqrt{3}}{3}$
 $\frac{12\pi}{6} = 2\pi$

360° 21. $\sec(2\pi) = 1$
"cos"

IV 22. $\csc\left(-\frac{\pi}{6}\right) = -2$
"sin 30"

II 23. $\cot\left(\frac{8\pi}{3}\right) = -\frac{1}{\sqrt{3}}$
 $\frac{9\pi}{3} = 3\pi$
tan 60°

III 24. $\sec\left(\frac{4\pi}{3}\right) = -2$
"cos 60" = -1/2

180° 25. $\csc(3\pi) = \text{und.}$
(-1,0) sin = 0

III 26. $\cot\left(\frac{7\pi}{6}\right) = \sqrt{3}$
"tan 30"

~~und.~~
 $= \frac{\sqrt{3}}{3} \rightarrow \frac{3}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{3\sqrt{3}}{3}$

270° 27. $\sec\left(\frac{\pi}{2}\right)$ und.
 $(0, -1)$

270° 29. $\cot\left(\frac{3\pi}{2}\right)$ 0
 $(0, -1)$

III 31. $\csc\left(-\frac{3\pi}{4}\right)$ $\frac{-2 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}} = \frac{-2\sqrt{2}}{2} = -\sqrt{2}$
 "sin 45"

270° 28. $\csc\left(\frac{3\pi}{2}\right)$ -1
 $(0, -1)$

III 30. $\sec\left(-\frac{5\pi}{6}\right)$ $\frac{-2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{-2\sqrt{3}}{3}$
 $\cos 30 = \frac{\sqrt{3}}{2}$

180° 32. $\cot(-\pi)$ und.
 $(-1, 0)$

Evaluate each of the following -- exact values only.

33. $\cot\left(\frac{\pi}{2}\right) + 3\sin\left(\frac{3\pi}{2}\right)$
 $(0, 1)$
 $0 + 3(-1)$
 -3

34. $\tan(0) - 6\sin\left(\frac{\pi}{2}\right)$
 $(1, 0)$ $(0, 1)$
 $0 - 6(1)$
 -6

35. $3\sec(\pi) - 5\tan(4\pi)$ $(1, 0)$
 $3(-1) - 5(0)$
 -3

36. $4\csc\left(\frac{3\pi}{2}\right) + 3\cos(\pi)$
 $(0, -1)$
 $4(-1) + 3(-1)$
 -7

37. $2\sec(0) + 4\cot^2\left(\frac{\pi}{2}\right) + \cos(2\pi)$
 $(1, 0)$ $(0, 1)$ $(1, 0)$
 $2(1) + 4(0)^2 + 1$
 3

38. $\sin^2\left(\frac{2\pi}{3}\right) + \cos^2\left(\frac{2\pi}{3}\right)$
 $\left(\frac{\sqrt{3}}{2}\right)^2 + \left(-\frac{1}{2}\right)^2$
 $\frac{3}{4} + \frac{1}{4} = 1$

39. $\cot^2\left(\frac{3\pi}{4}\right) - \sin\left(\frac{\pi}{6}\right) + 4\tan\left(\frac{\pi}{4}\right)$
 $(-1)^2 - \frac{1}{2} + 4(1)$
 4.5

40. $\cos^2\left(\frac{\pi}{3}\right) + \sec^2\left(\frac{5\pi}{6}\right) - \csc^2\left(\frac{7\pi}{6}\right)$
 $\left(\frac{1}{2}\right)^2 + \left(\frac{2}{\sqrt{3}}\right)^2 - (-2)^2$

42. $\sin^2\left(\frac{5\pi}{4}\right) - \cos^2\left(\frac{3\pi}{2}\right) + \tan\left(\frac{4\pi}{3}\right)$
 $(-1)^2 - 0^2 + \sqrt{3}$

41. $\cot\left(\frac{\pi}{6}\right) + \tan\left(\frac{\pi}{3}\right) - \sin\left(\frac{4\pi}{3}\right)$
 $\frac{3}{\sqrt{3}} + \frac{\sqrt{3}}{3} - \left(-\frac{\sqrt{3}}{2}\right)$
 $\sqrt{3} + \frac{\sqrt{3}}{3} + \frac{\sqrt{3}}{2}$

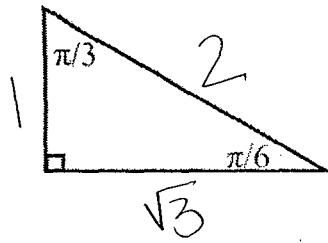
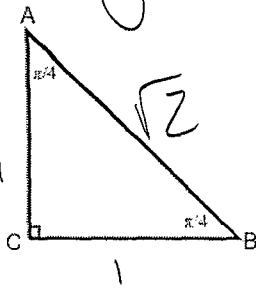
$\frac{1}{4} + \frac{4}{3} - 4 = -\frac{29}{12}$
 $\frac{2}{4} + \sqrt{3} = \frac{1}{2} + \sqrt{3}$

$\sqrt{3} + \sqrt{3} - \sqrt{2}$

$\frac{4\sqrt{3}}{2} - \frac{\sqrt{3}}{2} = \frac{3\sqrt{3}}{2}$

Name: Key

Date: _____



Find the exact value for each trigonometric function

1. $\sin(\pi/3)$ $\frac{\sqrt{3}}{2}$	2. $\tan(\pi/6)$ $\frac{1}{\sqrt{3}}$	3. $\cos(0)$ 1
4. $\sin(0)$ 0	5. $\cos(\pi/4)$ $\frac{1}{\sqrt{2}}$	6. $\sin(\pi/2)$ 1
7. $\cos(15\pi/4)$ $\frac{16\pi}{4}$ $\frac{1}{\sqrt{2}}$	8. $\csc(-4\pi/3)$ $-\frac{3\pi}{3}$ QII $\frac{\sqrt{3}}{2} \rightarrow \frac{2}{\sqrt{3}}$	9. $\cot(3\pi)$ $(-1, 0)$ und.
10. $\tan(19\pi/6)$ $\frac{18\pi}{6} = 3\pi$ Q3 $\frac{1}{\sqrt{3}}$	11. $\sec(-13\pi/3)$ $-\frac{12\pi}{3} = -4\pi$ QI $\cos \pi/3 = \frac{1}{2}$ $\rightarrow 2$	12. $\csc(\pi/2)$ $(0, 1)$ 1
13. $\sin(7\pi/3)$ $\frac{\sqrt{3}}{2}$	14. $\tan(-8\pi/3)$ $-\frac{9\pi}{3} = -3\pi$ Q2 $\sqrt{3}$	15. $\cos(5\pi/6)$ $-\frac{\sqrt{3}}{2}$


16. $\sec(5\pi/2)$

(0, 1)
und.


17. $\cot(-2\pi)$

(1, 0)
und.


18. $\sin(-11\pi/6)$

$\frac{-12}{6}$ 
 $\frac{1}{2}$


19. $\tan(-11\pi/4)$

$\frac{-12\pi}{4} = -3\pi$ 
-1


20. $\cos(-4\pi/3)$


 $-\frac{1}{2}$

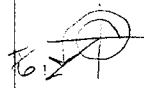
21. $\csc(9\pi/2)$

(0, 1)

1

22. $\cot(4\pi/3)$


 $\sqrt{3}$

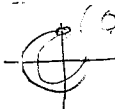
23. $\sec(19\pi/6)$

$\frac{18\pi}{6} = 3\pi$

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

24. $\cot(-\pi/3)$

$-\frac{1}{\sqrt{3}}$

25. $\sec(-7\pi/2)$

$\frac{-6}{2} = -3$

und.

26. $\sin(3\pi/2)$

-1

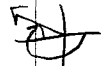
27. $\csc(-\pi/2)$

-1

28. $\cos(5\pi)$

(-1, 0)
-1

29. $\tan(-5\pi/4)$


-1

30. $\tan(9\pi/4)$


1