Without a Calculator:

Positive and Negative Coterminal Angles

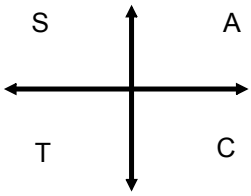
Converting

Radians $\longleftrightarrow$ Degrees

Memorized Trig Values of 30°, 45°, 60°

$\frac{\pi}{6}$ $\frac{\pi}{4}$ $\frac{\pi}{3}$

Know Trig Values all the way around the unit circle.



Quadrants

With a Calculator:

Arc Length = $radius \bullet radian$

Word problems - from WB

Rt Triangle Trig:

$\longrightarrow$ SOH CAH TOA

Law of Sines

$$\longrightarrow \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

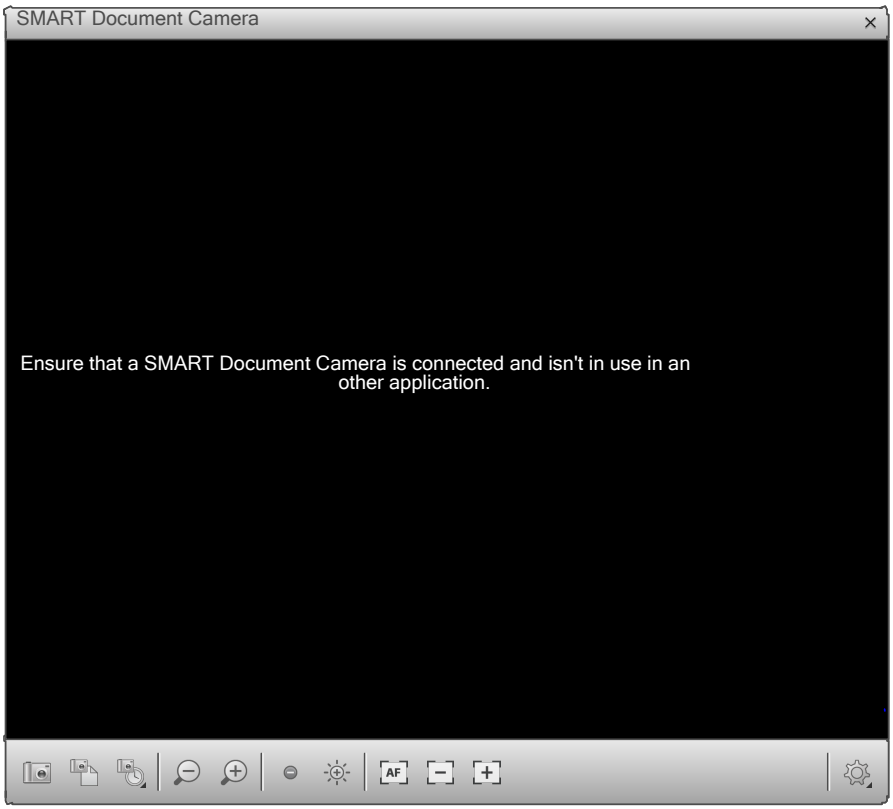
Law of Cosines

(use with SSS and SAS)

$$\longrightarrow a^2 = b^2 + c^2 - 2 \bullet b \bullet c \bullet \cos A$$

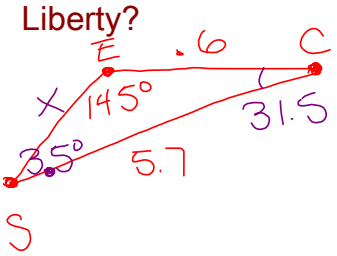
Area of Triangles

$$\longrightarrow Area = \frac{a \bullet b \bullet \sin C}{2}$$


SMART Document Camera
Ensure that a SMART Document Camera is connected and isn't in use in an other application.
AF

Word problem review for Trig Test. Draw a diagram and use your calculator.

1) You are on the observation deck of the Empire State Building looking at the Chrysler Building. When you turn about 145° you see the Statue of Liberty. You know that the Chrysler Building and the Empire State Building are about 0.6 miles apart and that the Chrysler Building is about 5.7 miles from the Statue of Liberty. Find the approximate distance between the Empire State Building and the Statue of Liberty?



$$\frac{\sin 145}{5.7} = \frac{\sin S}{.6}$$

$\sin S = .06$

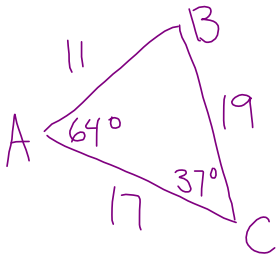
$$\frac{\sin 145}{5.7} = \frac{\sin 31.5}{X}$$

2) Two motorists start at the same point and travel in two straight courses. The courses diverge at an angle of 95°. If one motorist travels 200 miles and the other travels 260 miles, how far apart are they?

3) Three sides of a triangle are 11m, 17m and 19m.

Find the measure of the smallest angle.

→ Then find the area of this triangle.



$$11^2 = 17^2 + 19^2 - 2(17)(19)\cos C$$

$$\frac{11^2 - 17^2 - 19^2}{-2(17)(19)} = \cos C$$

$$\frac{1}{2} \cdot 17 \cdot 19 \cdot \sin 37$$

4) You are standing across the lake from Big Foot. Your angle of elevation from the ground to the top of his head is 38°. You are 56 ft across the lake from him. How tall is Big Foot?

Review Trig without a Calculator

Find each trig ratio.

csc 45°	cos $\frac{\pi}{4}$	sec $\frac{\pi}{3}$
sin 60°	sec $\frac{\pi}{6}$	cos 30°
cot $\frac{\pi}{6}$	sin 45°	tan 45°

Write as radians:			Write as degrees:		
45°	145°	$200^\circ \cdot \frac{\pi}{180}$	$\frac{5\pi}{6} \cdot \frac{180}{\pi}$	$\frac{3\pi}{4}$	
90°	360°	120°	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{7\pi}{2}$

Which quadrants? -145° $\frac{4\pi}{5}$ $\frac{7\pi}{3}$ 95°

Without a Calculator:

Find two coterminal angles (one positive and one negative)

150° ± 360

$\frac{3\pi}{4}$ $\pm 2\pi$

Convert from radians to degrees or from degrees to radians

150°

$\frac{7\pi}{2}$

Convert to radians.

300° 90°

Convert to degrees.

$\frac{3\pi}{4}$ $\frac{5\pi}{2}$

Find the measure in degrees.

$\tan\theta = \frac{-1}{\sqrt{3}}$

2, 4

$\theta = 30^o$

$\sin\theta = \frac{-1}{\sqrt{2}}$ 3, 4

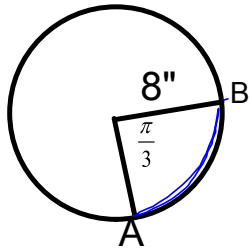
Q? → 2

Find the measure in radians.

$\cos\theta = \frac{\sqrt{3}}{2}$

$\tan\theta = 1$

Find the arc length AB.



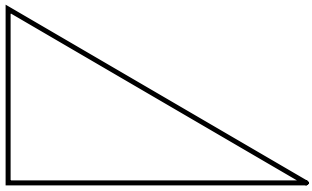
A person on a hill 1000 ft above sea level sights two boats in a line due east. The angles of depression are 48° and 34° respectively. How far apart are the boats?

Right triangle DOG, has right triangle at <O. d = 7 and g = 2. Find all the sides and angles.

With a Calculator:

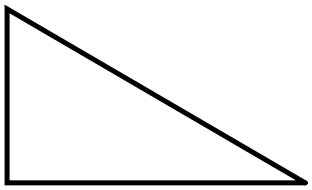
Find the remaining sides and angles.

In triangle MAD, the right angle is <A. Find all the sides and angles if d = 10 and m = 7



Given one trig ratio, determine the remaining trig ratios

In triangle COW, the right angle is <W and cos C = 1/4. Find each trig function as a fraction and decimal.



Angle of elevation and depression problems (like the worksheet)

Trig Unit Review

Review Sheet
Do the circled problems.

All the other problems are optional extra practice and are a good luck charm!

Trig Unit Review

P. 772 #12,13, 16-18
P. 774 #3-5
P. 828 #29,30
P.860 #5-21 odd
P. 862 #18-21, 28-31, 51, 54, 55

Trig Review Assignment

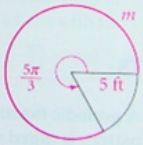
p 860

4. Q I
5. Q II
6. Q I
7. Q III
8. Q IV

10. $\frac{5\pi}{9}, 1.75$
11. $\frac{3\pi}{2}, 4.71$
12. $-\frac{\pi}{4}, -0.79$
15. $\frac{\pi}{18}, 0.17$
18. 150°
19. -540°
20. -234°

p 772

12. 13a. $-\frac{\pi}{4}$
    b. $\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}$
13. 14a. π
    b. $-1, 0$
14. 15a. 360°
    b. 1, 0
16. 16a. 150°
    b. $-\frac{\sqrt{3}}{2}, \frac{1}{2}$
17. 17a. $-135°$
    b. $-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}$
18. **18.** Use the circle to find the length of the indicated arc. Round your answer to the nearest tenth. **26.2 ft**



p. 774

3. 328°
4. 131°
5. 15°

p 862

18. $\angle B = 61°, a = 4.4, c = 9.1$

19. $b = 5.7, \angle A = 51.1°, \angle B = 38.9°$

20. $\angle A = 38°, c = 12.7, a = 7.8$

21. $c = 4.5, \angle A = 26.6°, \angle B = 63.4°$

22. $\angle B = 53°, a = 7.2, b = 9.6$

23. $a = 6.2, \angle B = 38.7°, \angle A = 51.3°$

28. 43
29. 11.3
30. 12.6
31. 46.3

p 828

28. 13.14 m^2
29. 92.12 ft^2
30. 57.81 m^2

Homework

p. 862 #18-23, 28-31, 51, 54, 55

GO COUGARS!

- One person per table!

- **Calculators - Part II**
CLEAR then put back to degrees

- Pencils only!

- HW -

Good Luck!