Curriculum Outcome

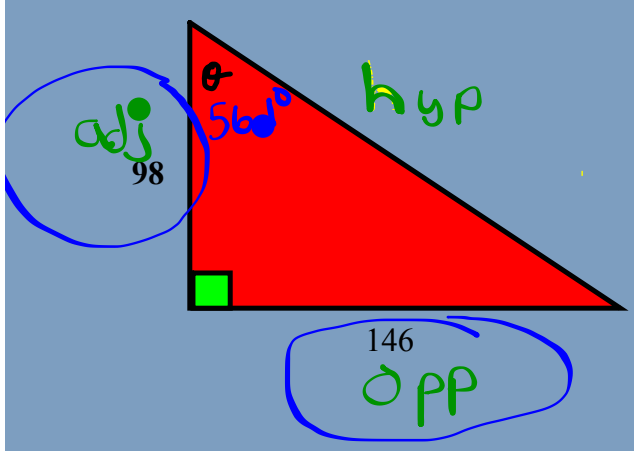
A1 Solve problems that require the manipulation and application of formulas related to: perimeter, area, volume, capacity, the Pythagorean theorem, primary trigonometric ratios, income. currency exchange, interest and finance charges.

G2 Demonstrate an understanding of the Pythagorean theorem by: identifying situations that involve right triangles, verifying the formula, applying the formula, solving problems.

G3 Demonstrate an understanding of primary trigonometric ratios (sine, cosine, tangent) by: applying similarity to right triangles, generalizing patterns from similar right triangles, applying the primary trigonometric ratios, and solving problems.

Student Friendly:

Exercise: Find the missing information



$\tan\theta = \frac{o}{a}$

$\tan\theta = \frac{146}{98}$

$\tan\theta = 1.4898$

$\theta = \tan^{-1}(1.4898$

$\theta = 56.1°$

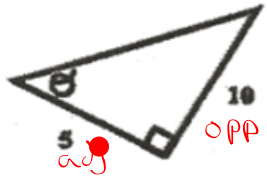
Lets go over homework

Primary Trig Ratios

For Calculator DEG Mode

** For each of the following list the three primary trig ratios, and theta.

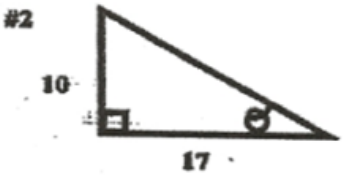
#1



opp
adj

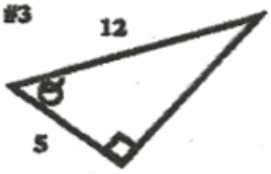
θ = 63.4°

#2



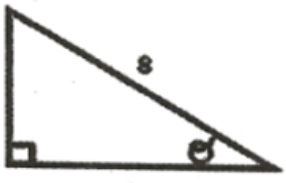
θ = 30.5°

#3



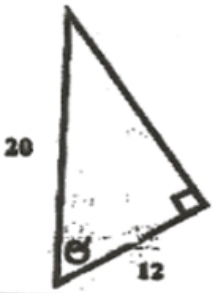
θ = 65.4°

#4



θ = 41.4°

#5

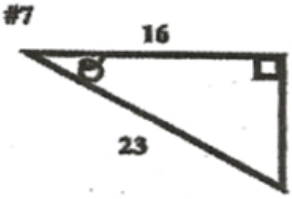


θ = 53.1°

#6

θ = 69.8°

#7



θ = 45.9°

Homework

Worksheet #3 - Trig Find Theta

Trigonometry – Finding Theta

** For each of the following,

#1

a) 20, 14

b) 13, 10

c) 11, 4

d) 17, 8

e) 9, 12

f) 26, 31

g) 17, 16

h) 5, 4

#2 For each triangle

- Decide on which trigonometric ratio you will use to find the missing angle.

(a) 18, 64

(b) 18, 23

(c) 52, 36

(d) 28.6, 96.5

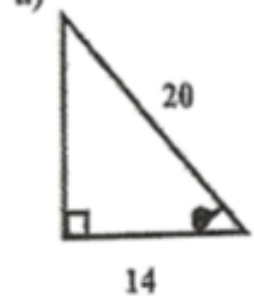
(e) 12.9, 4.8

(f) 16.2, 35.9

* For each of the following,

#1

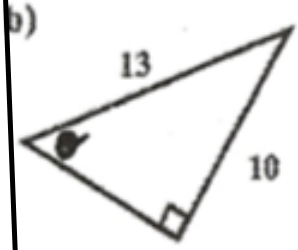
a)



$\cos\theta = 0.7$

$\theta = 45.6^\circ$

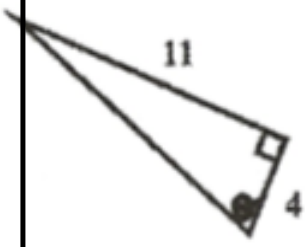
b)



$\sin\theta = 0.7692$

$\theta = 50.3^\circ$

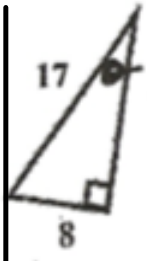
c)



$\tan\theta = 2.75$

$\theta = 70^\circ$

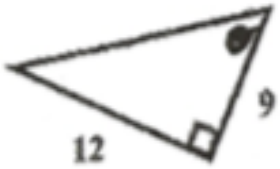
d)



$\sin\theta = 0.4$

$\theta = 28^\circ$

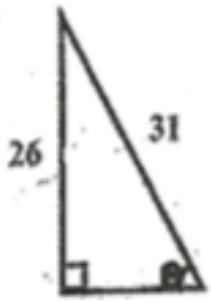
e)



$\tan\theta = 1.\overline{3}$

$\theta = 53^\circ$

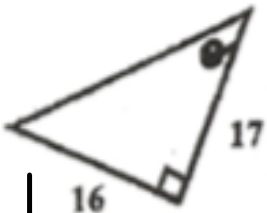
f)



$\sin\theta = 0.8387$

$\theta = 57^\circ$

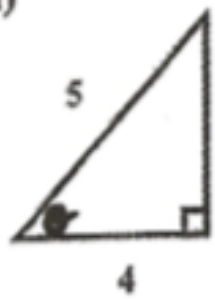
g)



$\tan\theta = 0.5412$

$\theta = 43^\circ$

h)



$\cos\theta = 0.8$

$\theta = 36.9^\circ$

(a)

$\theta = 16^\circ$

(b)

$\theta = 52$

(c)

$\theta = 46^\circ$

Homework Solutions

1) $\theta = 46^\circ$

B) $\theta = 50^\circ$

2) $\theta = 70^\circ$

d) $\theta = 28^\circ$

e) $\theta = 53^\circ$

f) $\theta = 57^\circ$

g) $\theta = 43^\circ$

h) $\theta = 37^\circ$

2a) 16°

b) 52°

c) 46°

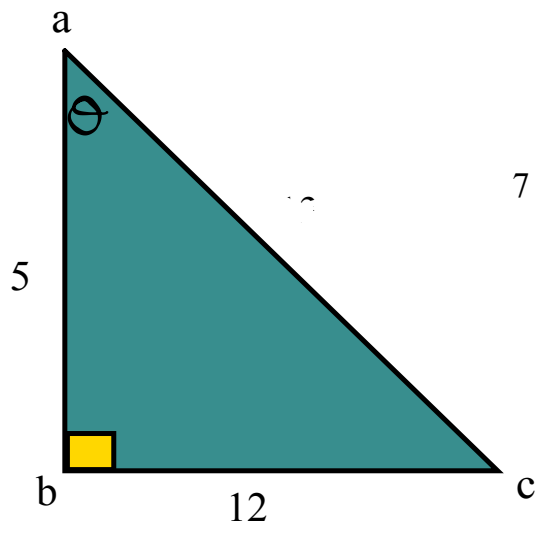
d) 74°

e) 68°

f) 26°

Find the value of <A in each triangle.

a)



$\tan\theta = \frac{o}{a}$

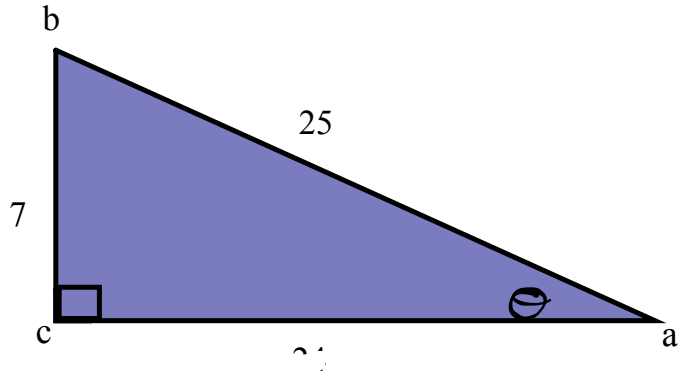
$\tan\theta = \frac{12}{5}$

$\tan\theta = 2.4$

$\theta = \tan^{-1}(2.4)$

$\theta = 67.4^\circ$

b)



$\sin\theta = \frac{o}{h}$

$\sin\theta = \frac{7}{25}$

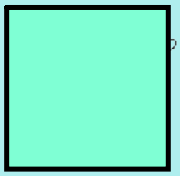
$\sin\theta = 0.28$

$\theta = \sin^{-1}(0.28)$

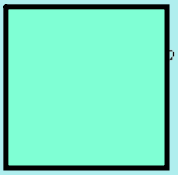
$\theta = 16.3^\circ$

Try these:

a) $Tan\sigma = 2.3559$



b) $Cos\sigma = 0.8746$



$$\tan\theta = 2.3559$$

$$\theta = \tan^{-1}(2.3559)$$

$$\theta = 67^\circ$$

When given the angle you can also find the trig ratio. For example, lets say we wanted to know what the value was for the sine of a 35 degree angle.

$$\sin 35^\circ = ?$$

Enter 35 into your calculator and press the sin key. You find that the answer is 0.5736

Find each of the following values using your calculator. Round to 4 decimal places.

a) $\sin 35^\circ =$ 0.5736

b) $\cos 35^\circ =$ 0.8192

c) $\tan 35^\circ =$ 0.7002

d) $\sin 88^\circ =$ 0.9994

e) $\cos 88^\circ =$ 0.0349

f) $\tan 88^\circ =$ 28.6362

g) $\sin 90^\circ =$ 1

h) $\cos 90^\circ =$ 0

i) $\tan 90^\circ =$ – E –

Calculate the unknown:

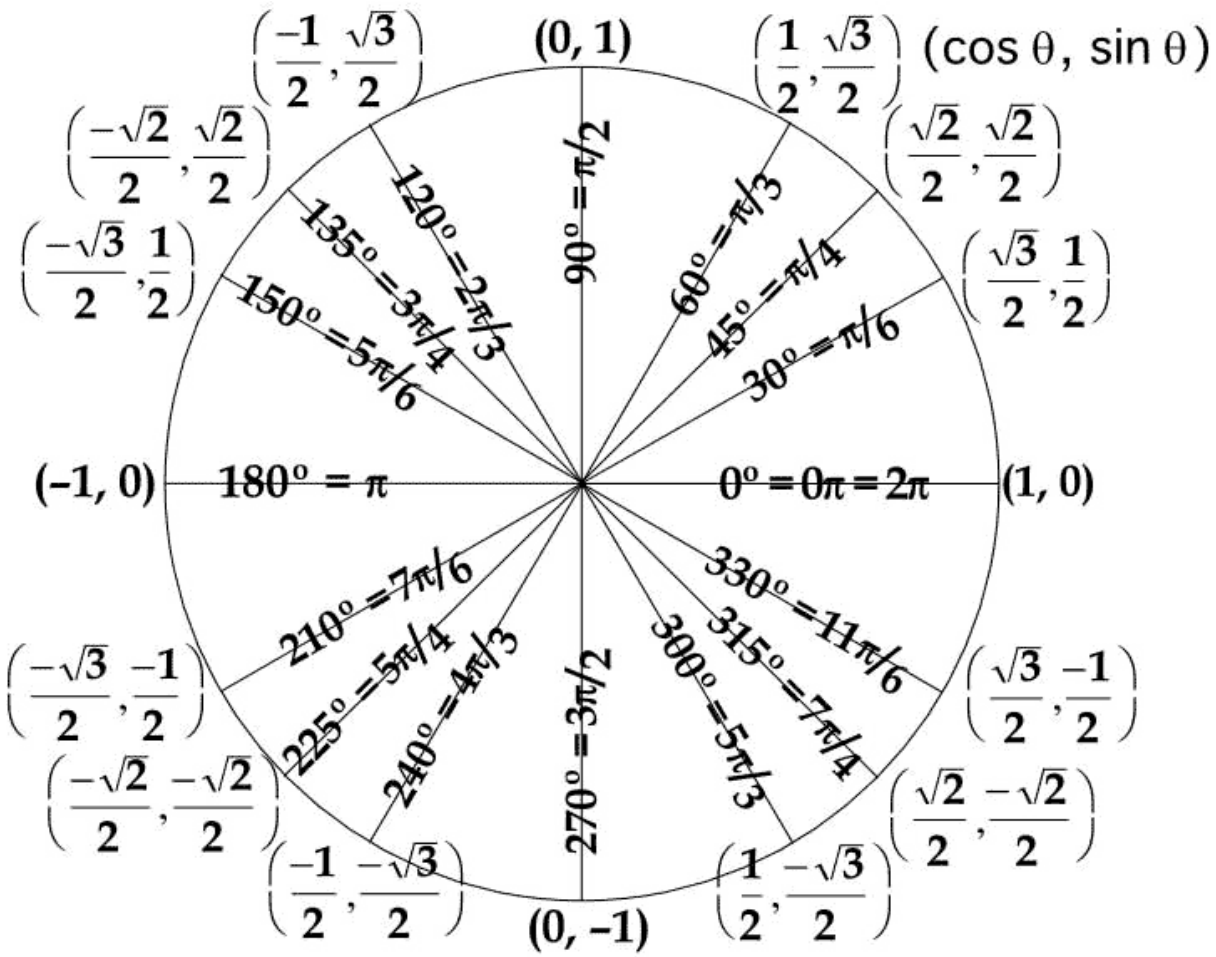
a) $\sin x = 0.9336$

b) $\cos 35^{o} = x$

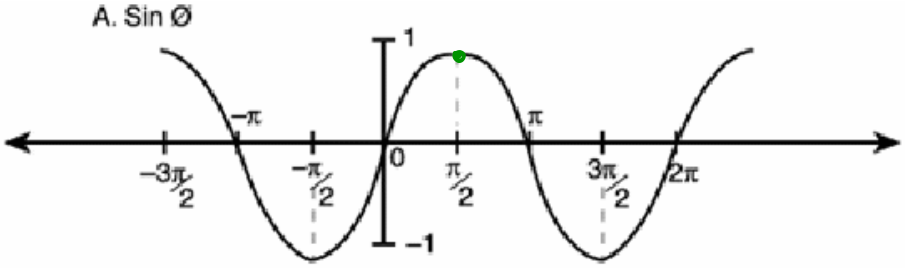
c) $\tan 25^{o} = x$

d) $\cos g = 0.6182$

e) $\tan f = 57$

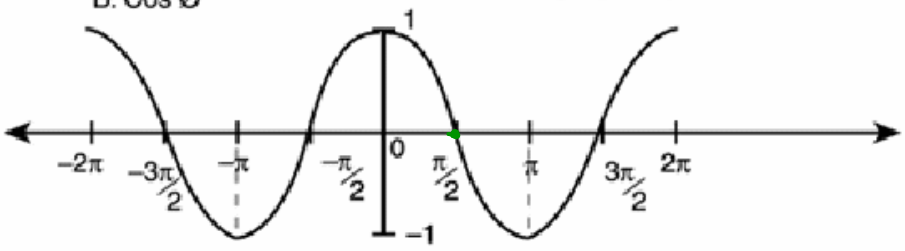

(cos θ, sin θ)
(0, 1)
$\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
$\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$
$\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$
(1, 0)
$\left(\frac{\sqrt{3}}{2}, \frac{-1}{2}\right)$
$\left(\frac{\sqrt{2}}{2}, \frac{-\sqrt{2}}{2}\right)$
$\left(\frac{1}{2}, \frac{-\sqrt{3}}{2}\right)$
(0, −1)
$\left(\frac{-1}{2}, \frac{-\sqrt{3}}{2}\right)$
$\left(\frac{-\sqrt{2}}{2}, \frac{-\sqrt{2}}{2}\right)$
$\left(\frac{-\sqrt{3}}{2}, \frac{-1}{2}\right)$
(−1, 0)
$\left(\frac{-\sqrt{3}}{2}, \frac{1}{2}\right)$
$\left(\frac{-\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$
$\left(\frac{-1}{2}, \frac{\sqrt{3}}{2}\right)$
90° = π/2
60° = π/3
45° = π/4
30° = π/6
0° = 0π = 2π
180° = π
120° = 2π/3
135° = 3π/4
150° = 5π/6
210° = 7π/6
225° = 5π/4
240° = 4π/3
270° = 3π/2
300° = 5π/3
315° = 7π/4
330° = 11π/6

A. Sin Ø



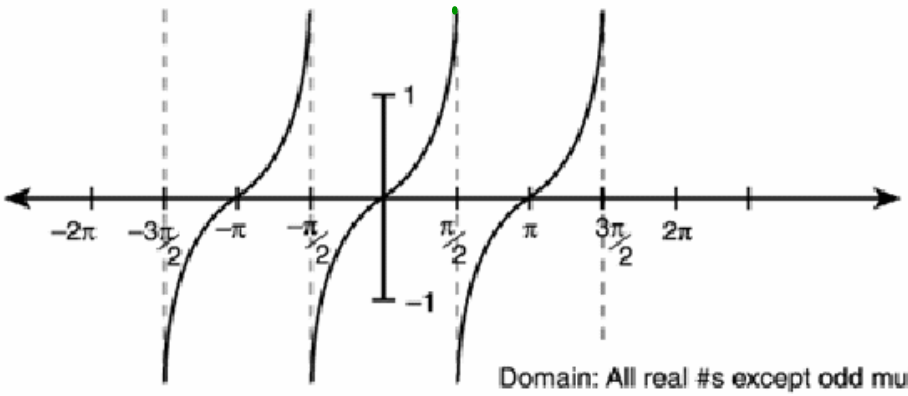
Domain: (−∞, ∞)
Range: [−1, 1]

B. Cos Ø



Domain: (−∞, ∞)
Range: [−1, 1]

C. Tan Ø



Domain: All real #s except **odd** multiples of π/2

Range: [−∞, +∞]

Homework

To be handed in for marks

Worksheet

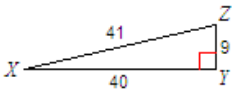
ID:

Math 10B Name_____

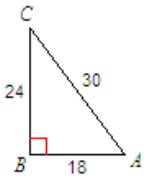
Trigometric Ratio Date_____

Find the value of each trigonometric ratio to the nearest ten-thousandth. THEN calculate the angle

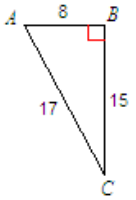
1) cos X



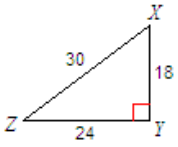
2) tan C



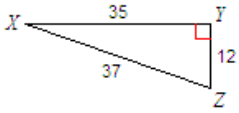
3) tan A



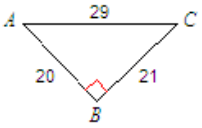
4) tan X



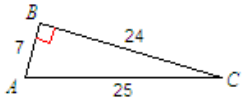
5) tan Z



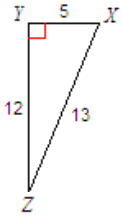
6) sin C



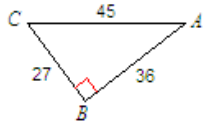
7) sin C



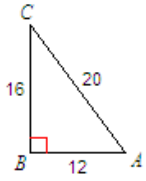
8) sin X



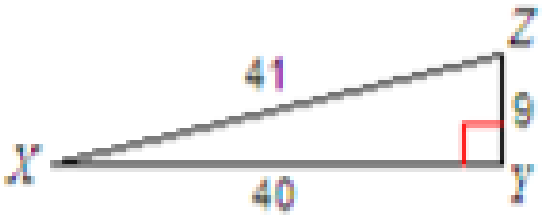
9) sin C



10) cos C



1) $\cos X$



$\cos\theta = \frac{a}{h}$

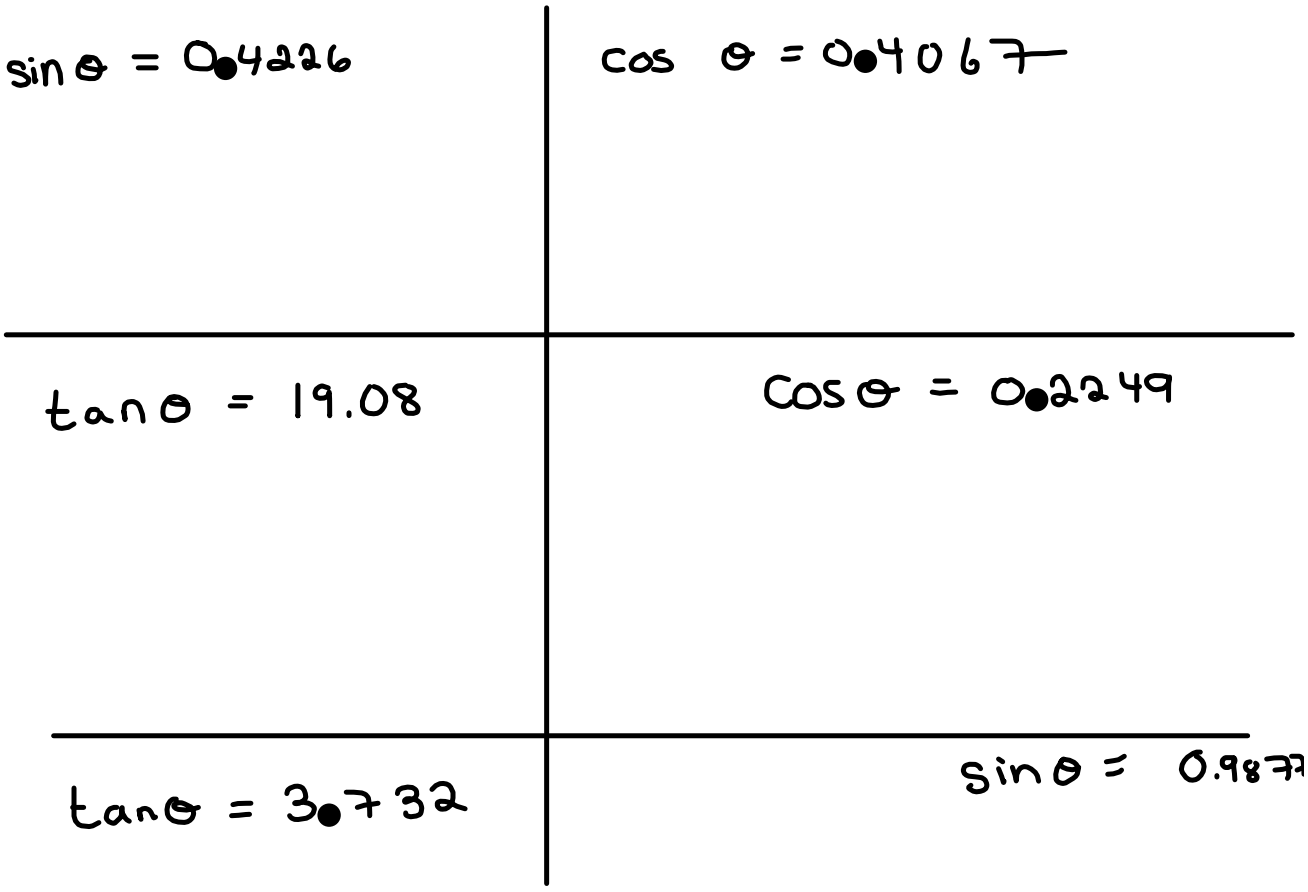
$\cos\theta = \frac{40}{41}$

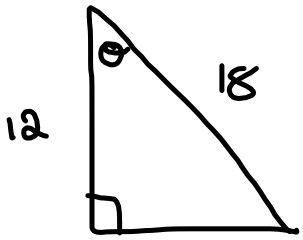
$\cos\theta = 0.9756$

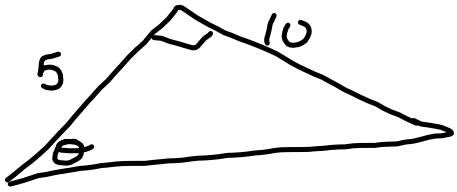
$\theta = \cos^{-1}(0.9756)$

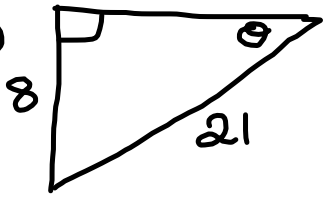
$\theta = 13°$

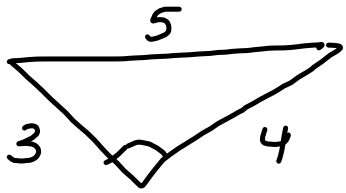
$\sin 30^\circ$ =	$\tan 14^\circ$ =	$\cos 52^\circ$ =
$\tan 89^\circ$ =	$\sin 15^\circ$ =	$\cos 5^\circ$ =


sin θ = 0.4226
cos θ = 0.4067
tan θ = 19.08
cos θ = 0.2249
tan θ = 3.732
sin θ = 0.9877





3) 

4) 

Attachments

Math 10B - Trigometric Ratio.ia1

TrigTable WS 2.docx

TrigTheta WS 3.docx