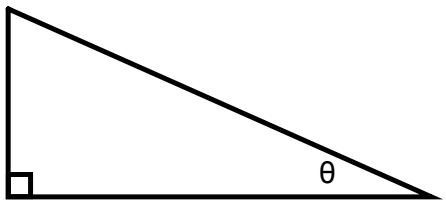
L01 - Trigonometric Ratios

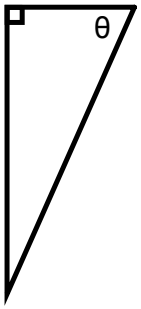
Part 1a - Labelling Sides

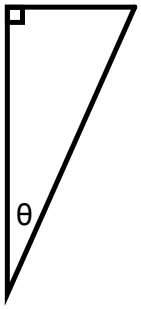
Opposite - The side that is *opposite* to the angle.

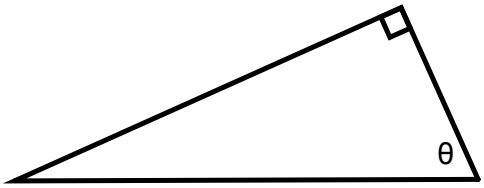
Adjacent - The side that is *adjacent* to the angle.

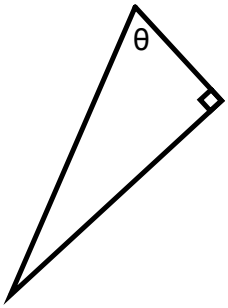
Hypotenuse - The *long diagonal* side.











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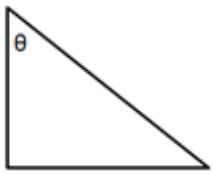
Part 1b – Labelling Sides using Numerical Response

Use the following information to answer Q1:

Labelling the Sides of a Triangle



Side Orientation

1 – Diagonal

2 – Horizontal

3 – Vertical

Q1: Use the numbers above to identify each side of the triangle.

Orientation: _____ _____ _____

Description: **Adjacent** **Hypotenuse** **Opposite**

*(Record your **three-digit** answer in the Numerical Response boxes below)*

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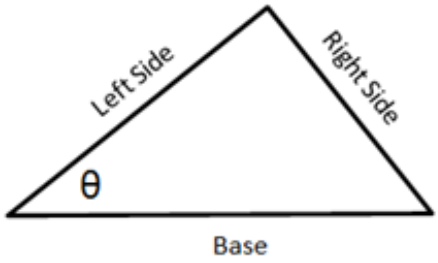
Use the following information to answer Q2:

Labelling the Sides of a Triangle



Side Orientation

1 – Base

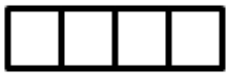
2 – Left Side

3 – Right Side

Q2: Use the numbers above to identify each side of the triangle.

Orientation:	_____	_____	_____
Description:	**Adjacent**	**Hypotenuse**	**Opposite**

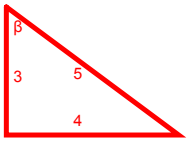
*(Record your **three-digit** answer in the Numerical Response boxes below)*

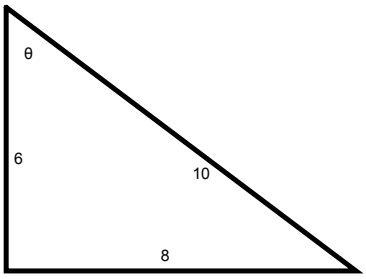


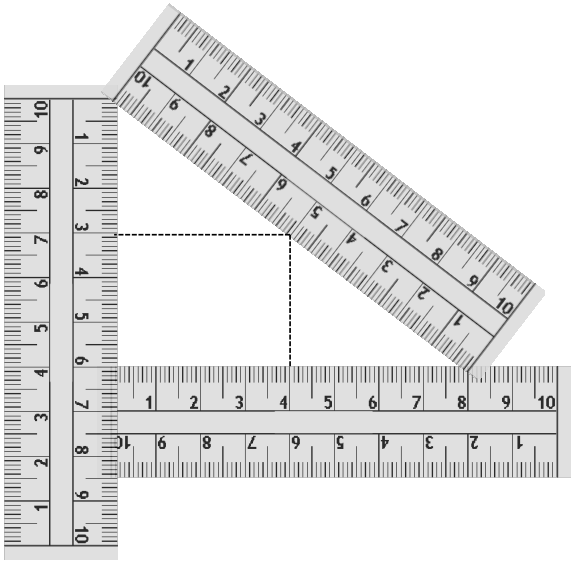
Part 2 - Similar Triangles and Ratios

What do a 3-4-5 triangle and a 6-8-10 triangle have in common?

HINT: Think in terms of angles and ratios.



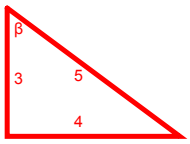




Part 3a - Trig Ratios

SohCahToa

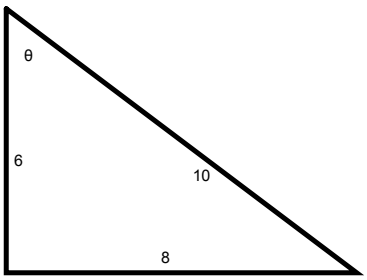
$$\sin\theta = \frac{o}{h} \qquad \cos\theta = \frac{a}{h} \qquad \tan\theta = \frac{o}{a}$$



Sin β =

Cos β =

Tan β =



Sin θ =

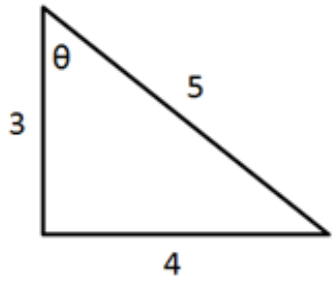
Cos θ =

Tan θ =

Part 3b – Trig Ratios using Numerical Response

Use the following information to answer Q3-Q5:

Trig Ratios for a 3-4-5 Triangle



Q3: For the triangle above, the ratio $Sin\ \theta = \frac{a}{b}$ where the integers ***a*** and ***b*** are ___ and ___.

*(Record your **two digit** answer in the Numerical Response boxes below)*

Q4: What is the value of $Cos\ \theta$?

*(Record your **three digit** answer in the Numerical Response boxes below)*

Q5: What is the value of $Tan\ \theta$, accurate to the nearest tenth?

(Record your answer in the Numerical Response boxes below)

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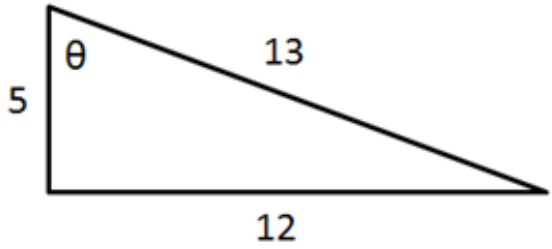
Use the following information to answer Q6-8:

Trig Ratios for 5-12-13 Triangles



Q6: For the triangle above, the ratio $Tan\ \theta = \frac{ab}{c}$ where the integers a, b, and c are ___, ___, and ___.

*(Record your **three digit** answer in the Numerical Response boxes below)*

Q7: What is the value of $Tan\ \theta$?

*(Record your **two digit** answer in the Numerical Response boxes below)*

Q8: What is the value of $Tan\ \theta$, accurate to the nearest hundredth?

(Record your answer in the Numerical Response boxes below)

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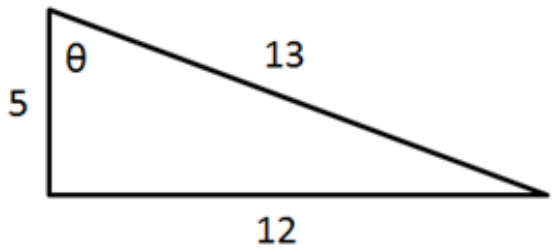
Part 3c - Trig Ratios using Numerical Response and Scientific Notation

Use the following information to answer Q9-11:

Trig Ratios for 5-12-13 Triangles



Q9: The value of $Sin\ \theta$ is ***a.bc*** x 10^{-d}, where ***a, b, c,*** and ***d*** are ___, ___, ___, and ___.

(Record your answer in the Numerical Response boxes below)

Q10: The value of $Cos\ \theta$ is ***a.bc*** x 10^{-d}, where ***a, b, c,*** and ***d*** are ___, ___, ___, and ___.

(Record your answer in the Numerical Response boxes below)

Q11: The value of $Tan\ \theta$ is ***a.bc*** x 10^{d}, where ***a, b, c,*** and ***d*** are ___, ___, ___, and ___.

(Record your answer in the Numerical Response boxes below)

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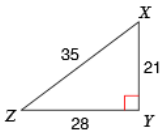
Name_____

Trigonometric Ratios

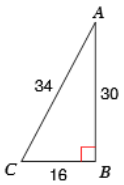
Date_____ Period____

Find the value of each trigonometric ratio.

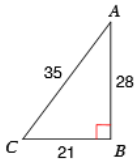
1) tan Z



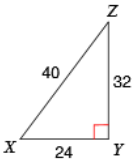
2) cos C



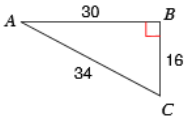
3) sin C



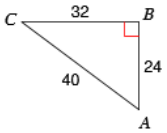
4) tan X



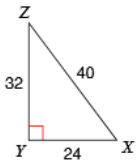
5) cos A



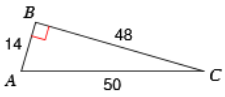
6) sin A



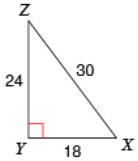
7) sin Z



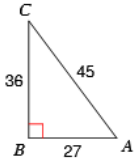
8) sin C



9) cos Z

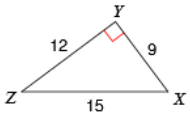


10) tan C

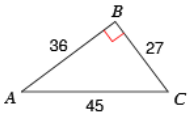


Find the value of each trigonometric ratio to the nearest ten-thousandth.

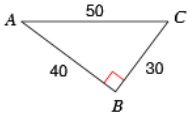
11) cos Z



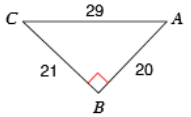
12) cos C



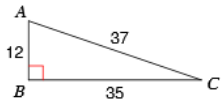
13) tan C



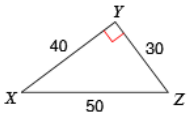
14) tan A



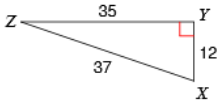
15) tan C



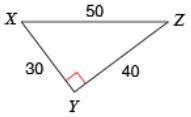
16) tan X



17) sin Z



18) sin Z



19) sin 48°

20) sin 38°

21) cos 61°

22) cos 51°

Critical thinking questions:

23) Can the sine of an angle ever equal 2? Why or why not?

24) $\sin x = \frac{1}{3}$

Find cos x.

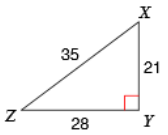
Kuta Software - Infinite Geometry Name_____

Trigonometric Ratios

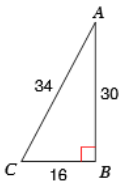
Date_____ Period____

Find the value of each trigonometric ratio.

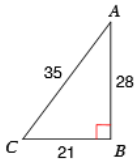
1) tan Z $\frac{3}{4}$



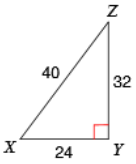
2) cos C $\frac{8}{17}$



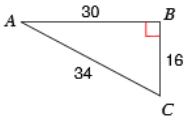
3) sin C $\frac{4}{5}$



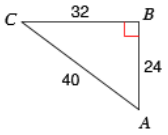
4) tan X $\frac{4}{3}$



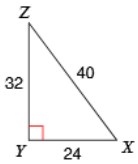
5) cos A $\frac{15}{17}$



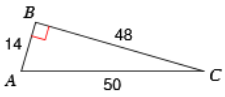
6) sin A $\frac{4}{5}$



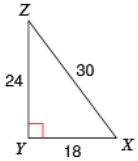
7) sin Z $\frac{3}{5}$



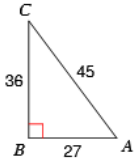
8) sin C $\frac{7}{25}$



9) cos Z $\frac{4}{5}$

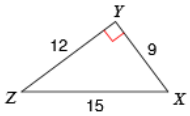


10) tan C $\frac{3}{4}$



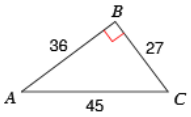
Find the value of each trigonometric ratio to the nearest ten-thousandth.

11) cos Z



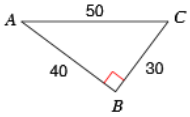
0.8000

12) cos C



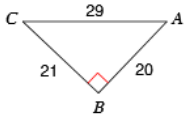
0.6000

13) tan C



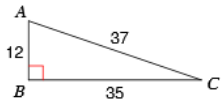
1.3333

14) tan A



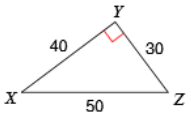
1.0500

15) tan C



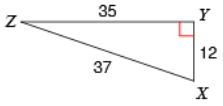
0.3429

16) tan X



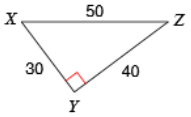
0.7500

17) sin Z



0.3243

18) sin Z



0.6000

19) sin 48°

0.7431

20) sin 38°

0.6157

21) cos 61°

0.4848

22) cos 51°

0.6293

Critical thinking questions:

23) Can the sine of an angle ever equal 2? Why or why not?

No, the hypotenuse > opposite side.

24) $\sin x = \frac{1}{3}$ $\frac{2\sqrt{2}}{3}$

Find cos x.