DO NOW

$S\frac{o}{H}$ $C\frac{A}{H}$ $T\frac{o}{A}$

Write each trigonometric ratio for the triangle

$\sin D = \dfrac{18}{30}$ OR $\dfrac{3}{5}$

$\cos D = \dfrac{24}{30}$

$\tan D = \dfrac{18}{24}$

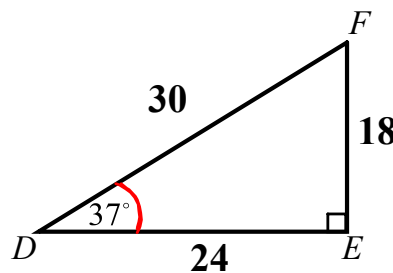hyp 30

18 OPP

37°

24

adj
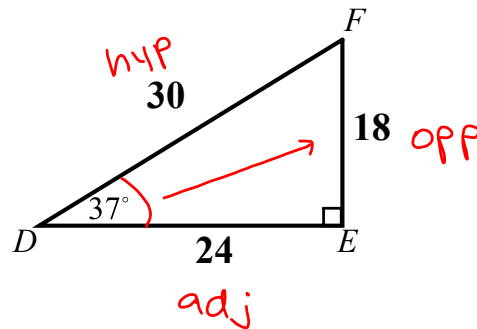
Jan 4-8:26 AM

Rewrite each trigonometric ratio <u>as a decimal</u> rounded to the nearest hundredth

$\sin D = \dfrac{18}{30} = .6$

$\cos D = \dfrac{24}{30} = .8$

$\tan D = \dfrac{18}{24} = .75$

30

18

37°

24

Use your calculator to find: (DEGREE <u>MODE</u>)

$\sin(37°) = .6$ $\cos(37°) = .8$ $\tan(37°) = .75$

What do you notice?

Jan 16-8:23 AM

1

Finding the Angle of a Right Triangle

Use INVERSE trig functions

The trig inverse of an angle *A* is written:

$$\sin^{-1} A$$
$$\cos^{-1} A$$
$$\tan^{-1} A$$

"sine inverse of ∠ A"

Jan 4-8:32 AM

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1) Find m∠ *A* if sin *A* = 0.7071

$$m\angle A = \sin^{-1}(.7071)$$

$$\boxed{m\angle A = 45°}$$

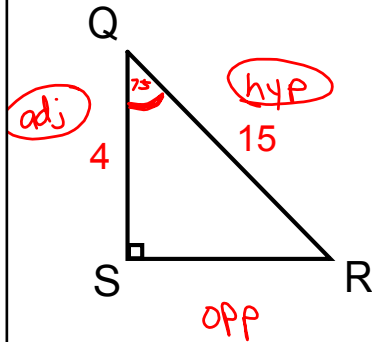2) Find m∠ A if cos *A* = $\frac{1}{2}$

$$m\angle A = \cos^{-1}\left(\frac{1}{2}\right)$$

$$\boxed{m\angle A = 60°}$$

Jan 4-8:36 AM

To find the measure of an ANGLE of a right triangle, use the inverse trig function!
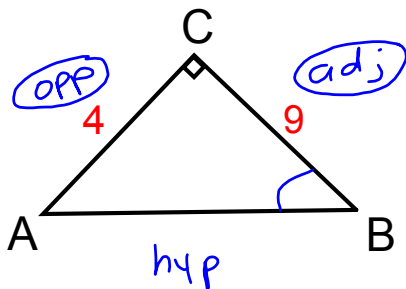
Find $m\angle Q$ to the nearest degree

$$\cos Q = \frac{4}{15}$$

$$m\angle Q = \cos^{-1}\left(\frac{4}{15}\right)$$

$$m\angle Q = 75°$$
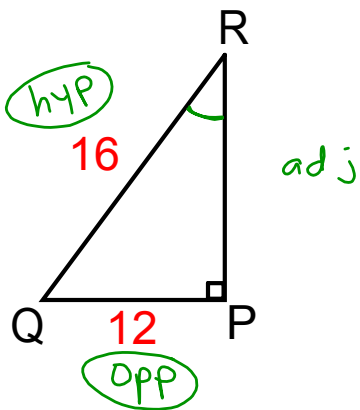
Jan 4-8:30 AM

Find $m\angle B$ to the nearest degree

$$\tan B = \frac{4}{9}$$

$$\tan^{-1}\left(\frac{4}{9}\right)$$

$$m\angle B = 24°$$

Jan 4-8:45 AM

3

Find $m\angle R$ to the nearest degree

R

hyp

16

adj

Q   12   P

Opp

$\sin R = \dfrac{12}{16}$

$\sin^{-1}\left(\dfrac{12}{16}\right)$

$m\angle R = 49°$

Jan 4-8:48 AM

In $\triangle ABC$, angle C is a right angle, AC = 10, BC = 24 and AB = 26. Find:
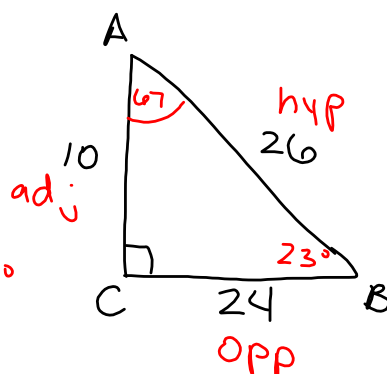
1) The measure of angle A to the nearest degree

2) The measure of angle B to the nearest degree

$\sin A = \dfrac{24}{26}$

$m\angle A = 67°$

$\cos A = \dfrac{10}{26}$

$m\angle A = 67°$

A

67

hyp

26

10

adj

23°

C   24   B

Opp

Jan 5-11:47 AM

4