Algebra 2 Bellwork Wednesday, March 23

1. Are each group of three lengths sides of a right triangle?

a. $9, 15, 17$ b. $18, 80, 82$

2.Find the third number in each Pythagorean Triple, e.g. the third side of each Right Triangle.

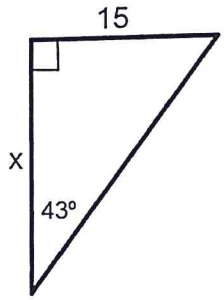
a. $18, 24, \_\_\_\_$ b. $36, 85, \_\_\_\_\_$

3. In Right Triangle ABC, where C is the right angle, $\text{SinB} = \frac{11}{61}$. Find each trigonometric ratio.

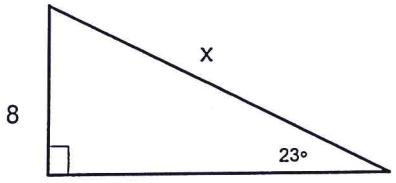
a) CosB b) TanA

4. Find the missing side in each triangle using one of the trigonometric ratios. Round to the nearest hundredth.

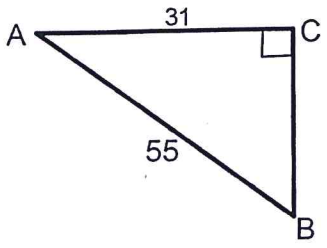
a.



b.



5. Find the measure of Angle A to the nearest tenth of a degree



Algebra 2 Bellwork Wednesday, March 23 Answers

1. Are each group of three lengths sides of a right triangle?

a. 9, 15, 17

IS THIS TRUE?

$9^2+15^2=17^2$

$306 \neq 289$

NOT A RT Δ

b. 18, 80, 82

IS THIS TRUE?

$18^2+80^2=82^2$

$6724=6724$

Yes, it's a rt Δ

2. Find the third number in each Pythagorean Triple, e.g. the third side of each Right Triangle.

a. 18, 24, $\frac{30}{x}$

x is a leg → $x^2+18^2=24^2$ $x=15.87$ ✗

or

x is the hypot → $18^2+24^2=x^2$ $x=30$ ✓

b. 36, 85, $\frac{77}{x}$

x is a leg → $x^2+36^2=85^2$ $x=77$ ✓

or

x is the hypot $36^2+85^2=x^2$ $x=92.31$ ✗

3. In Right Triangle ABC, where C is the right angle, $\text{Sin}B = \frac{11}{61}$. (opp leg / hypot) Find each trigonometric ratio.

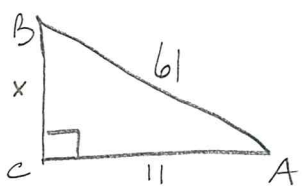
a) CosB

$= \frac{\text{adj leg}}{\text{hypot}} = \frac{60}{61}$

b) TanA

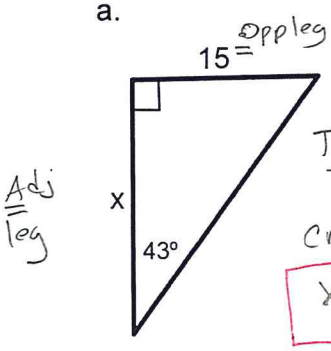
$= \frac{\text{opp leg}}{\text{adj leg}} = \frac{60}{11}$

Find X → $x^2+11^2=61^2$ $x=60$



4. Find the missing side in each triangle using one of the trigonometric ratios. Round to the nearest hundredth.

a. SOHCAHTOA

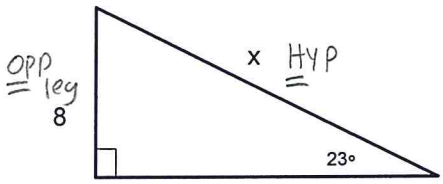


$\frac{\text{Tan } 43}{1} = \frac{15}{x}$

Cross mult:

$x = 16.09$

b. SOHCAHTOA

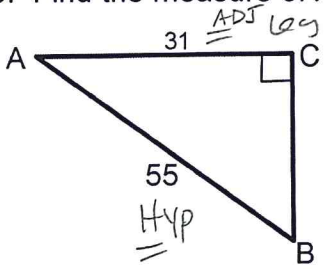


$\frac{\text{Sin } 23^\circ}{1} = \frac{8}{x}$

cross mult:

$x = 20.47$

5. Find the measure of Angle A to the nearest tenth of a degree



SOHCAHTOA

$\text{Cos}A = \frac{31}{55}$

$\angle A = \cos^{-1}\left(\frac{31}{55}\right)$

↳ inverse Cos.

$\angle A = 55.7^\circ$

When doing Sin, Cos, or Tan make sure calculator is in the correct MODE

↳ DEGREES or RADIANS