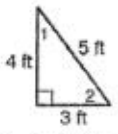
Name _____ Date _____ Class _____

Geometry **Trig Ratio HW**

Solving Right Triangles

Use the given trigonometric ratio to determine whether ∠1 or ∠2 is ∠A in each exercise.



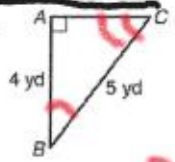
1. $\sin A = \frac{4}{5}$ 2
2. $\cos A = \frac{4}{5}$ 1
3. $\tan A = \frac{3}{4}$ 1
4. $\sin A = \frac{3}{5}$ 1
5. $\cos A = \frac{3}{5}$ 2
6. $\tan A = \frac{4}{3}$ 2

Use a calculator to find each angle measure to the nearest degree.

7. $\sin^{-1}(0.33)$ 19°
8. $\cos^{-1}(0.47)$ 62°
9. $\tan^{-1}(1.21)$ 50°
10. $\sin^{-1}\left(\frac{9}{10}\right)$ 64°
11. $\cos^{-1}\left(\frac{1}{5}\right)$ 78°
12. $\tan^{-1}\left(2\frac{3}{4}\right)$ 70°

Use a calculator and inverse trigonometric ratios to find the unknown side lengths and angle measures. Round lengths to the nearest hundredth and angle measures to the nearest degree.

13.

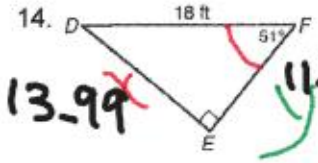


$AC =$ 3

$m\angle B =$ 37°

$m\angle C =$ 53°

14.



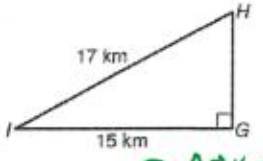
13.99 ✗ 11.33

$DE =$ 13.99

$EF =$ 11.33

$m\angle D =$ 39°

15.

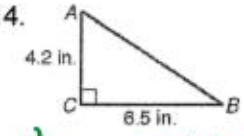


$GH =$ 8.00km $15^2+b^2=17^2$ $b=8$

$m\angle H =$ 62° $\sin(H)=\frac{15}{17}$

$m\angle I =$ 28° $\cos(I)=\frac{15}{17}$

14.



$4.2^2+6.5^2=c^2$ $AB =$ 7.74in

$7.74=c$

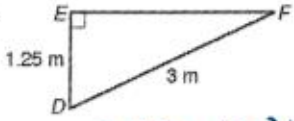
$m\angle A =$ 57°

$\tan(A)=\frac{6.5}{4.2}$

$m\angle B =$ 33°

$\tan(B)=\frac{4.2}{6.5}$

15.

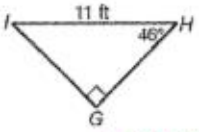


$EF =$ 2.73m $1.25^2+b^2=3^2$ $b=2.727$

$m\angle D =$ 65° $\cos(D)=\frac{1.25}{3}$

$m\angle F =$ 25° $\sin(F)=\frac{1.25}{3}$

16.



$GH =$ 7.64ft $\cos(46)=\frac{x}{11}$

$GI =$ 7.91ft $\sin(46)=\frac{y}{11}$

$m\angle I =$ 44°

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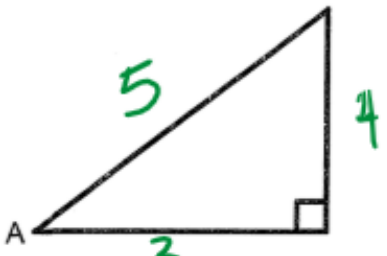
If $\sin A = \frac{4}{5}$, find cos *A* and tan *A*. Leave the answers in ratio form.

Then use a calculator to find m∠*A* to the nearest tenth of a degree.



17. cos $A =$ $\frac{3}{5}$ 18. tan $A =$ $\frac{4}{3}$ 19. m∠$A =$ 53.1°

Given the value of one trigonometric function, find the other two. Leave the answers in ratio form. Rationalize fractions. Find angle measures to the nearest tenth of a degree.

20. tan $E = \frac{1}{2}$ ∠E= 26.6° $\sin(E) = \frac{\sqrt{5}}{5}$ $\cos(E) = \frac{2\sqrt{5}}{5}$

21. cos $M = \frac{\sqrt{3}}{2}$ ∠M= 30° $\sin(M) = \frac{1}{2}$ $\tan(M) = \frac{\sqrt{3}}{3}$

22. sin $H = \frac{\sqrt{2}}{2}$ ∠H= 45° $\cos(H) = \frac{\sqrt{2}}{2}$ $\tan(H) = 1$

23. tan $K = \sqrt{3}$ ∠K= 60° $\sin(K) = \frac{\sqrt{3}}{2}$ $\cos(K) = \frac{1}{2}$