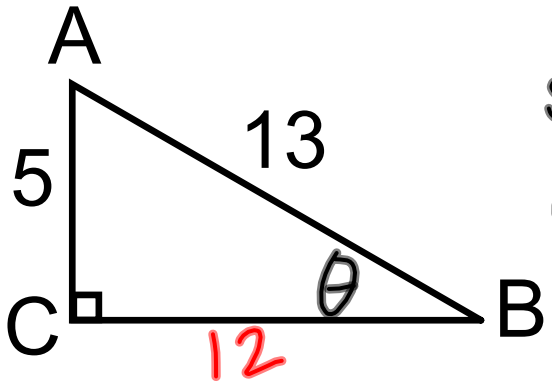
1.1 Right Triangle Trig using Calculator

EQ: How do I calculate missing side lengths & angles of a right triangle?

Warm-Up Tuesday

Find all six trig values for the diagram below. $5^2 + x^2 = 13^2$



$\sin\theta =$ $\csc\theta =$

$\cos\theta =$ $\sec\theta =$

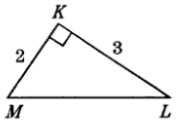
$\tan\theta =$ $\cot\theta =$

About Me

1. Are you a dog person or a cat person?
2. What are you most looking forward to this year?

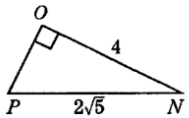
1.1 Right Triangle Trig **ODDS**

For problems 1-8, use the diagram of $\triangle KLM$ and find:



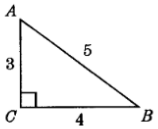
1. $\cos \measuredangle L$
2. $\tan \measuredangle L$
3. $\csc \measuredangle M$
4. $\sin \measuredangle M$
5. $\cot \measuredangle M$
6. $\csc \measuredangle L$
7. $\sec \measuredangle L$
8. $\cos \measuredangle M$

For problems 9-16, use the diagram of $\triangle NOP$ and find:



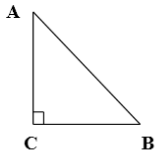
9. $\sin \measuredangle N$
10. $\cot \measuredangle P$
11. $\sec \measuredangle N$
12. $\csc \measuredangle N$
13. $\tan \measuredangle P$
14. $\cos \measuredangle P$
15. $\cos \measuredangle N$
16. $\csc \measuredangle P$

For problems 17-23, use the diagram of $\triangle ABC$ to fill in the missing angle letter:



17. $\sin \measuredangle$ ____ $= \frac{3}{5}$
18. $\csc \measuredangle$ ____ $= \frac{5}{4}$
19. $\cot \measuredangle$ ____ $= \frac{3}{4}$
20. $\sec \measuredangle$ ____ $= \frac{5}{4}$
21. $\tan \measuredangle$ ____ $= \frac{3}{4}$
22. $\cos \measuredangle$ ____ $= \frac{3}{5}$
23. $\csc \measuredangle$ ____ $= \frac{5}{3}$

For problems 24-31, use the diagram of $\triangle ABC$ to find each side length:



24. If $\sin \measuredangle B = \frac{2}{5}$, find AB

25. If $\sin \measuredangle B = \frac{3}{4}$, find BC

26. If $\csc \measuredangle B = \frac{7}{3}$, find BC

27. If $\cos \measuredangle A = \frac{3}{5}$, find BC

28. If $\sec \measuredangle A = \frac{6}{5}$, find BC

29. If $\tan \measuredangle B = \frac{7}{5}$, find AB

30. If $\cot \measuredangle B = \frac{5}{3}$, find AB

31. If $\sec \measuredangle A = \frac{7}{3}$, find AB

32. If $\cos \theta = \frac{4}{5}$, what is $\tan \theta$?

33. If $\tan \theta = 3$, what is $\sec \theta$?

$\tan \theta = \frac{OPP}{ADJ} = \frac{3}{1}$

$\sec \theta = \frac{HYP}{ADJ} = \boxed{\frac{\sqrt{10}}{1}}$

$1^2 + 3^2 = x^2$

34. If $\csc \theta = \frac{7}{3}$, what is $\cot \theta$?

35. If $\cot \theta = \frac{1}{2}$, what is $\sin \theta$?

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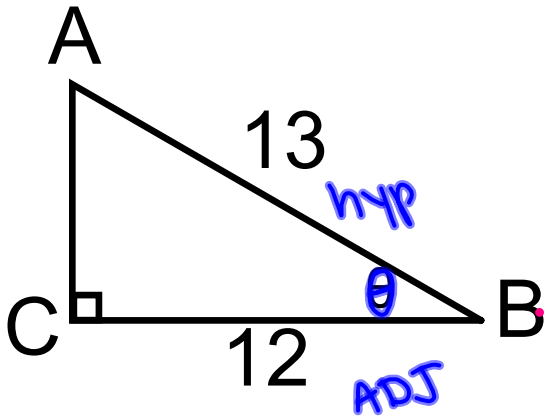
EQ: How do I calculate missing side lengths & angles of a right triangle?

Find the indicated missing side length, x, or the angle, θ.

SOH CAH TOA

CALC: 2nd trig Func.
MODE: Deg

1.



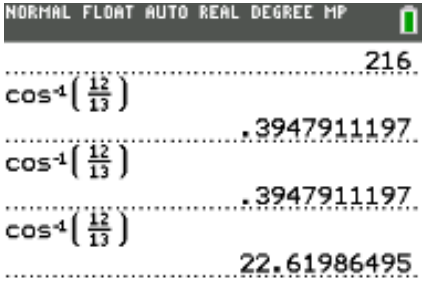
$\cos\theta = \frac{12}{13}$

$\cos^{-1}(\cos\theta) = \cos^{-1}\left(\frac{12}{13}\right)$

$\theta = \boxed{22.62°}$

$x+2=4$
$-2 \quad -2$
$x=2$

$\sqrt{x} = \sqrt[3]{4}$
$x=2$



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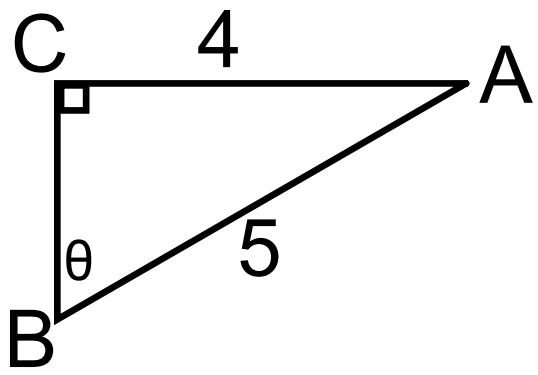
2.



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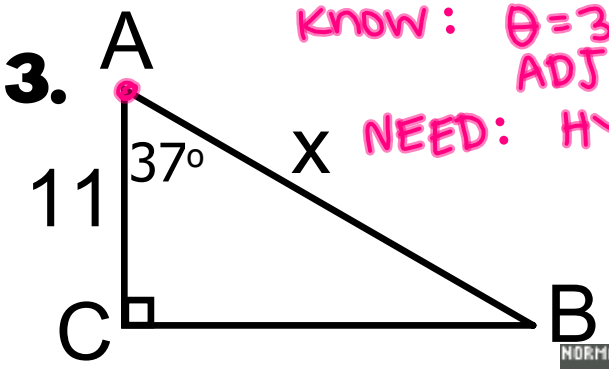
3.



Know: $\theta = 37°$
$ADJ = 11$

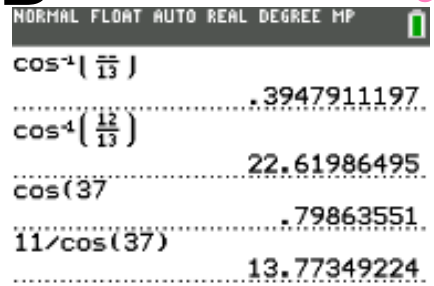
NEED: HYP.

$\cos\theta = \frac{ADJ}{HYP}$

$\frac{\cos 37}{1} = \frac{11}{x}$

$\frac{x\cos 37}{\cos 37} = \frac{11}{\cos 37}$

$\boxed{13.77}$



θ → $\boxed{\text{2nd}}$ $^{-1}$

side → regular

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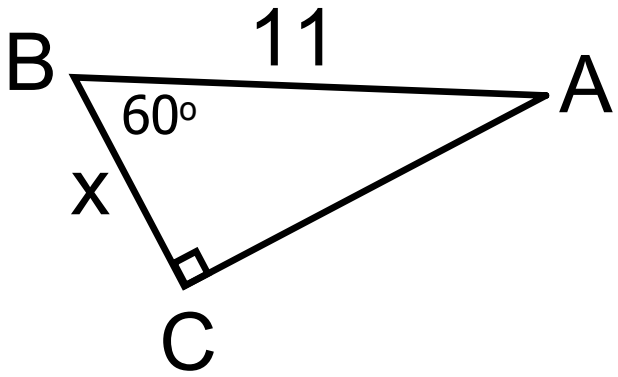
4.



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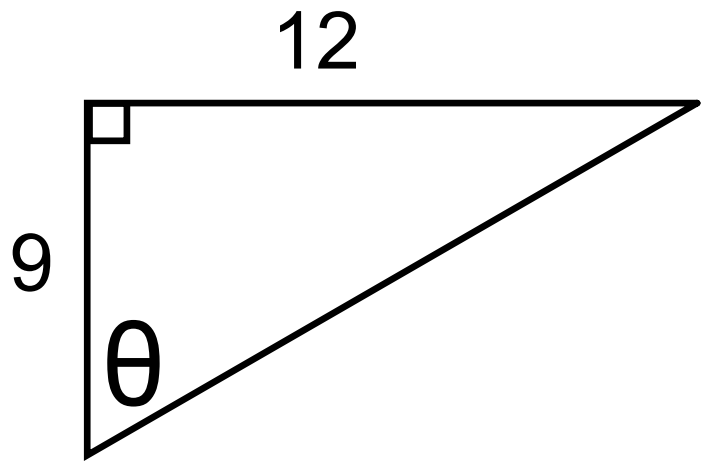
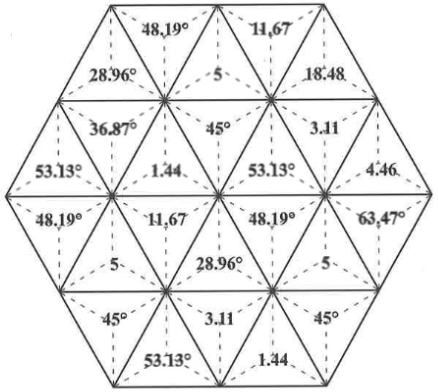
Find the indicated missing side length, x, or the angle, θ.

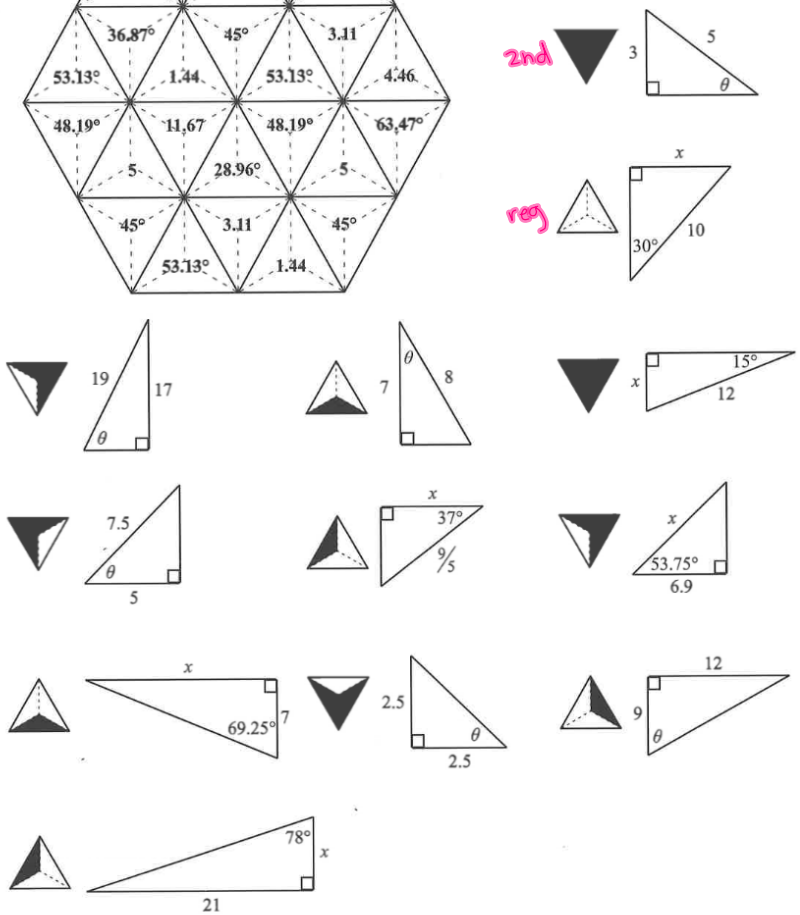
Closing



ACTIVITY 23 Name _____

Find the missing side length x or angle θ in each right triangle. Round each answer to two decimal places. The triangles below are not drawn to scale.





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