

Now do: p. 311 #10

SOH CAH TOA

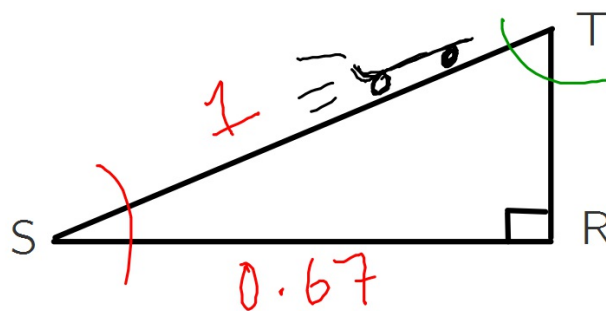
10. Suppose you know that $\triangle RST$ is a right triangle with a right angle at $\angle R$. If $\cos S = 0.67$, what other trigonometric ratio can you write?

$$\cos S = \frac{0.67}{1}$$

← adj
← hyp

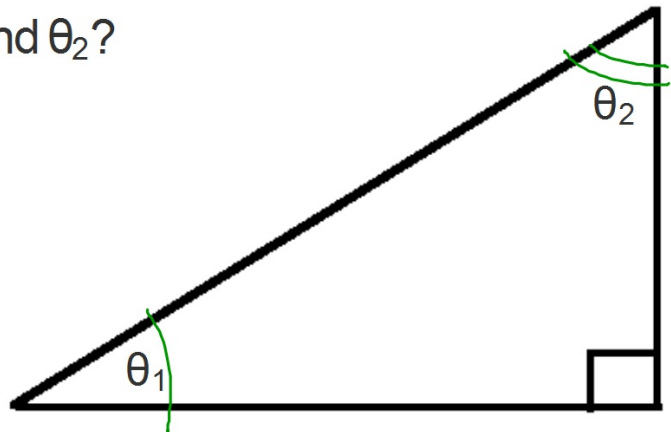
$$\sin T = \frac{0.67}{1}$$

← opp
← hyp



Extending #10.....

What do you notice about θ_1 and θ_2 ?

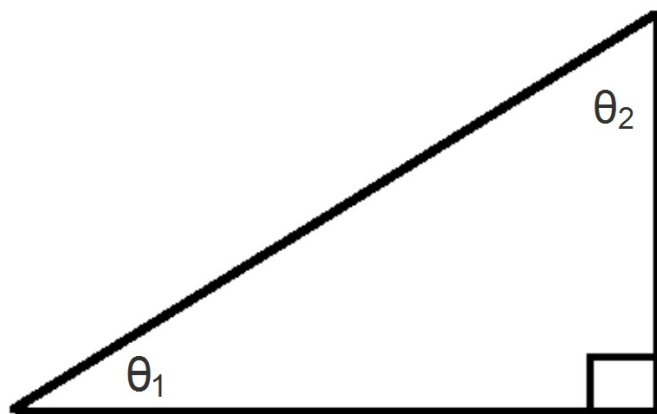


$\sin \theta_1$
 $\cos \theta_2$
same

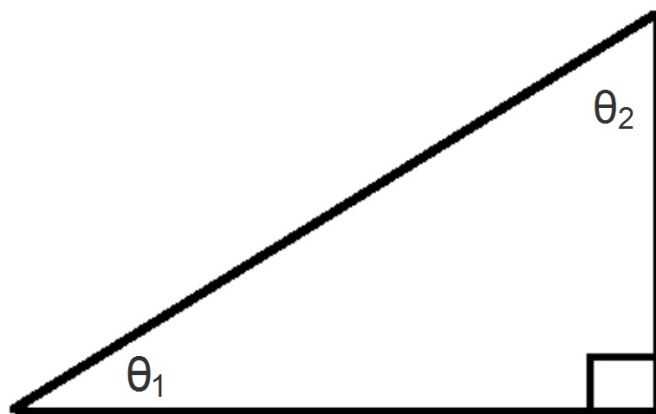
$\sin \theta_2$
 $\cos \theta_1$
same



True or false: the side opposite θ_1 is also opposite θ_2



True or false: the side adjacent θ_2 is also opposite θ_1



Important result:
write on p. 310

If two angles are complementary, then the sine of one is equal to the cosine of the other.

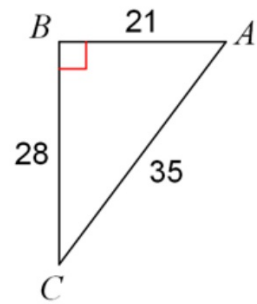
ex: $\cos 31^\circ = \sin 59^\circ$

Psst....now you are able to do #5 on the practice assessment

SRT-C7: Refer to the diagram.

5. If $\sin C = \frac{21}{35}$, what is $\cos A$? Give both the numerical answer and a written explanation.

$$\frac{21}{35}$$

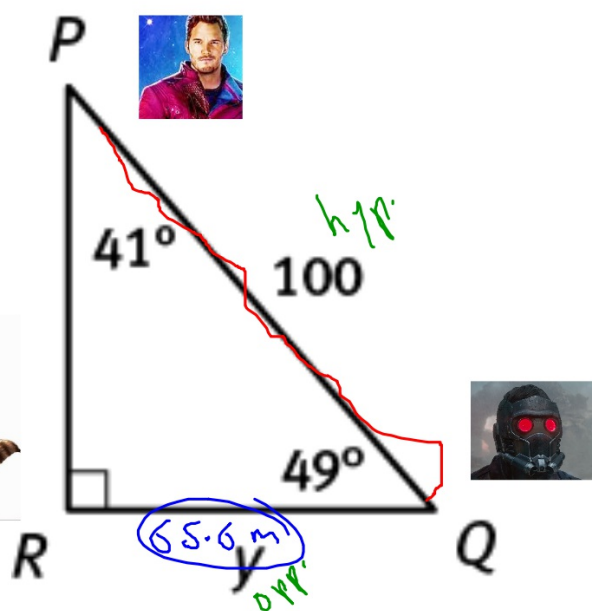


Consider...

(p 312)

СОКРАТОВА

Peter and Quill are separated by 100 meters of lava as shown:



Since he can't walk directly to Quill, Peter walks to the Raccoon and then heads toward Quill.

How far is the second leg of the walk?

~~sin 41 =~~

$$\sin 41 = \frac{y}{100}$$

↓

$$100 (0.656 = \frac{y}{100})$$

65.6 = y

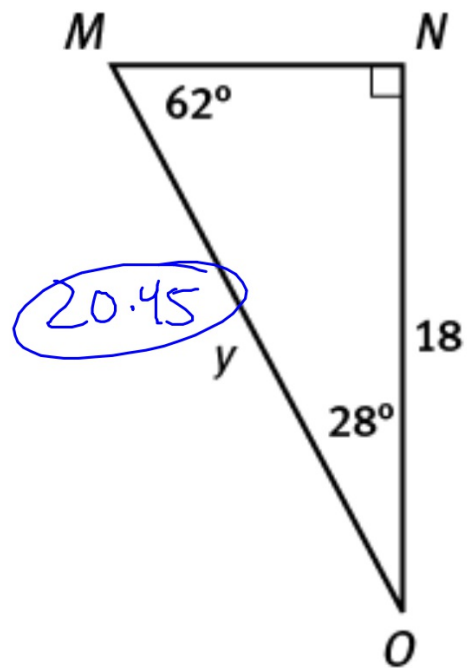
Now you:

Find y .

$$\cos 28^\circ = \frac{18}{y}$$

$$* \frac{0.88}{1} = \frac{18}{y} *$$

$$\frac{18}{0.88} = \frac{0.88y}{0.88}$$
$$20.45 = y$$



What is the calculator doing when you type in something like:

$\cos(28)$

and the calculator says 0.8829475...??



Before calculators, mathematicians and students alike had to use "trig tables" which were books full of data that others had calculated by hand. Since similar right triangles, these ratios could be used for any angle measure.

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	Sinus	Tangens	Secans	
81	29	9680748	38020782	39894421
59	28	9680018	38574537	39849654
39	27	9679288	38528396	39804991
19	26	9678557	38482358	39760431
01	25	9677825	38436424	39715975
83	24	9677092	38390591	39671621
67	23	9676358	38344861	39627369
51	22	9675624	38299233	39583219
37	21	9674888	38253707	39539171
23	20	9674152	38208281	39495224
11	19	9673415	38162957	39451379
99	18	9672678	38117733	39407633
88	17	9671939	38072609	39363988
79	16	9671200	38027585	39320443
70	15	9670459	37982661	39276997
63	14	9669718	37937835	39233651
56	13	9668977	37893109	39190403
51	12	9668234	37848481	39147254
45	11	9667490	37803951	39104203
43	10	9666746	37759519	39061250
40	9	9666001	37715185	39018395
38	8	9665255	37670947	38975637
36	7	9664508	37626807	38932976
34	6	9663761	37582763	38890411
40	5	9663012	37538815	38847943
42	4	9662263	37494963	38805570
46	3	9661513	37451207	38763293
50	2	9660762	37407546	38721112
55	1	9660011	37363980	38679025
62	0	9659258	37320508	38637033

Need the ratio of adjacent leg to hypotenuse for a 28° angle?

Look it up in the table!

The calculator is kind of* doing that.

1619 AD

Tables can work in 2 directions.



Appetizers

A1.	Vegetable Spring Roll (1 pc)	\$1.35
A2.	Pork Egg Roll (1 pc)	\$1.50
A3.	Crab Rangoon (8 pcs)	\$6.25
A4.	Steamed or Fried: Vegetable Gyoza (6pc) <small>g Kinds vegetables: Edamame, Green Bean, Yellow Carrot, Carrot, Red Bell Pepper, Onion, Potato, Cabbage and Garlic</small>	\$4.25 / \$4.95
A5.	Steamed or Fried: Pork Potsticker (8pc)	\$5.25 / \$5.95
A6.	Cho Cho Chicken (4 pcs) <small>Marinated in house teriyaki sauce and skewered on sticks</small>	\$6.95
A8.	Thai Fish Cake (8 pcs) <small>w. Sriracha hot chili sauce</small>	\$4.50

"I ordered Crab Rangoons...how much did I pay?"



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"I paid \$6.25...what did I order?"



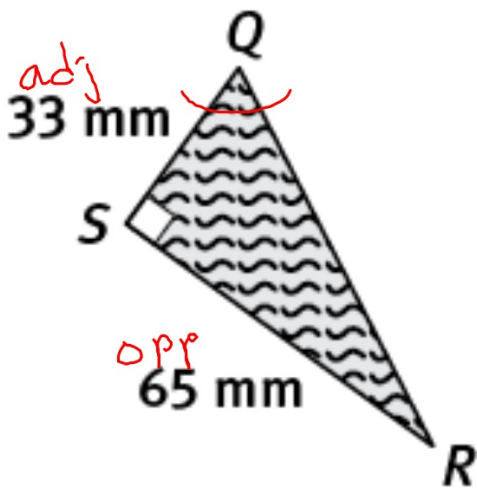
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Inverse Trig Functions p. 316

SOHCAHTOA

How many degrees is angle Q?



$$\tan Q = \frac{65}{33}$$

$$\tan Q = 1.96$$

$$\tan^{-1} 1.96 = Q$$

$$\boxed{63^\circ \approx Q}$$

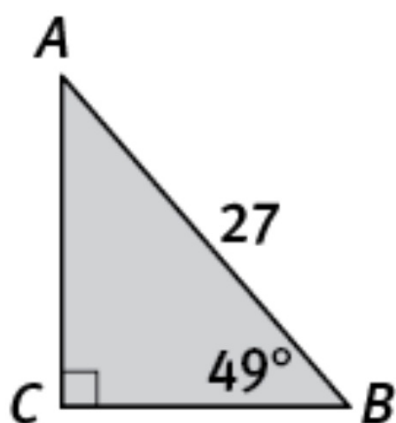
p 315 important table

Inverse Trig Functions	a.k.a.
If $\sin A = x$, then $\sin^{-1}x = m\angle A$.	$\arcsin x = \angle A$
If $\cos A = x$, then $\cos^{-1}x = m\angle A$.	$\arccos x = \angle A$
If $\tan A = x$, then $\tan^{-1}x = m\angle A$.	$\arctan x = \angle A$

$$\sin \text{ ANGLE} = \text{ratio}$$

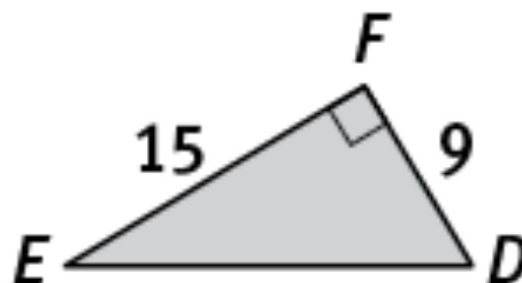
$$\arcsin \text{ ratio} = \text{ANGLE}$$

Do now: #9ac



Instructions:
"Solve the triangle"

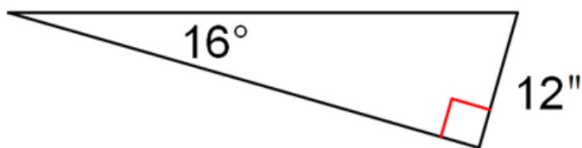
Find all missing sides and angles.



Practice Assessment: Let's do #6

SRT-C8:

6. The figure below represents a side-view of a skateboard ramp 12 inches high with a 16° incline. Find the perimeter of the figure to two decimal places of accuracy.



Homework:

p. 317

6-8, 12ab (SRT-C7 and SRT-C8)

Practice Assessment solutions on mgeo.weebly.com

**will also contain review from last assessment
that is NOT on the practice**

to review, look over last assessment/homeworks