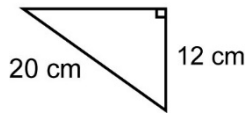


DAY 1 – PYTHAGOREAN THEOREM

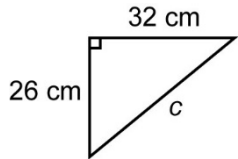
1. Find b



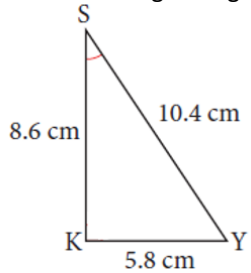
Theorem states:

Hypotenuse must be:

2. Find c



3. Check if a triangle is right angled:

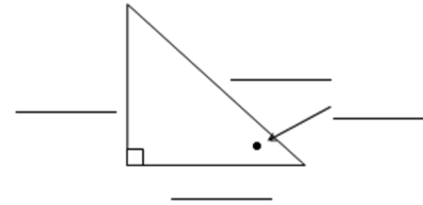


Check if a triangle has a right angle

DAY 2 – PRIMARY TRIG RATIOS

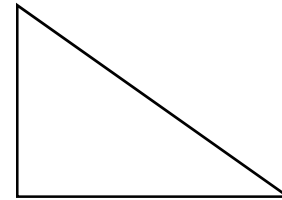
Hypotenuse	Acronym to use
Focus Angle θ	— — —
Opposite	— — —
Adjacent	— — —

4. Definition labels



Ways to round

Capital letters -
Small case letters -



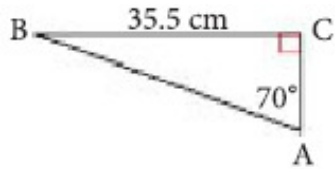
5. I can tell my calculator is in degree mode if:
6. Try on your calculator $\sin 90^\circ = \underline{\hspace{2cm}}$ $\cos 90^\circ = \underline{\hspace{2cm}}$
Order of pressing calculator buttons for me is:
7. $\tan 90^\circ = \underline{\hspace{2cm}}$ What can you conclude about what angle cannot be used when solving triangles with SOH CAH TOA?

DAY 2 CONT'D

Finding side steps:

Word Problem Steps

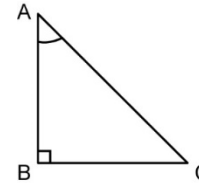
1. Find side b



2. A custodian secures a ladder of length 10 m against the side of the school. The ladder makes an angle of 70° with the ground. Will the custodian be able to reach a window that is 7.5 m above the ground? Justify your answer.

DAY 3 – MORE PRIMARY TRIG RATIOS

3. Practice labelling triangles using side names: opposite, adjacent, hypotenuse.



Finding angle steps:

4. A storm caused a 13.5 m hydro pole to lean over. The shadow of the pole is 11.8 m on the ground. Find the measure of the angle between the hydro pole and the ground, to the nearest degree.



5. In Mexico, one of the Maya pyramids at Chichen Itza has stairs that rise about 64 cm for every 71 cm of run. Find the angle of rise of these stairs that's close to the horizontal.

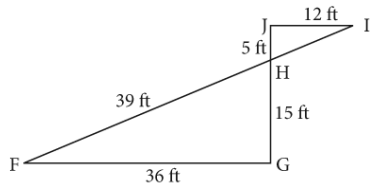
DAY 4 – SIMILAR TRIANGLES

Symbols

Steps

If you do not feel like using labels

1. Find side IH

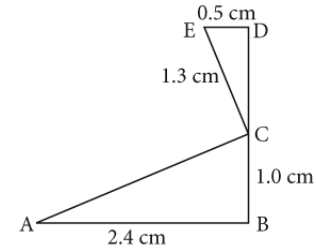


2.

Built in 1860, the Jupiter Inlet lighthouse is the oldest building in Palm Beach County. On a sunny day, a 2-meter tall tourist stands next to the lighthouse and casts a 1.5-meter shadow. At the same time, the lighthouse casts a 24-meter shadow. What is the height of the lighthouse?

DAY 5 – MORE SIMILAR TRIANGLES

3. Find side AC



4.

Bill placed a mirror on the ground 5 m from the base of a flagpole. He stepped back until he could see the top of the flagpole reflected in the mirror. Bill is 1.5 m tall and saw the reflection when he was 1.25 m from the mirror. How high is the flagpole?

DAY 6 - SOLVE WORD PROBLEMS

Angle of Elevation

Strategies for Δ 's

Angle of Depression

1.

Tonya is standing 17 m from the base of a tower. She measures the angle of elevation to the top of a tower to be 33° . What is the height of the tower, to the nearest metre?

2.

Hugo has his own small plane. He is planning his approach to the Kingston airport. He wants to descend at an angle of 22° from horizontal. If he starts his descent at an altitude of 10 000 ft, how long is his glide path to the runway?



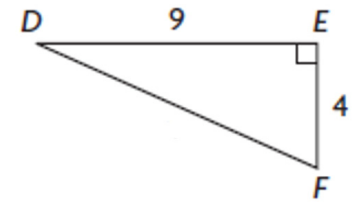
3.

A 5-m-long ladder is leaning up against the side wall of a barn. The base of the ladder is 4.2 m from the base of the barn wall. Find the angle the ladder makes with the ground.

5.

A telephone pole 10m tall casts a shadow 8m long at the same time that a tree nearby casts a shadow 11m long. How tall is the tree?

4. a) find 3rd side



b) Find all three ratios for the triangle at angle D.

Find angle D

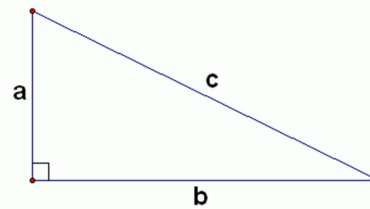
Find angle F

Table of Trigonometric Ratios

Angle	Sine	Cosine	Tangent
1°	.0175	.9998	.0175
2°	.0349	.9994	.0349
3°	.0523	.9986	.0524
4°	.0698	.9976	.0699
5°	.0872	.9962	.0875
6°	.1045	.9945	.1051
7°	.1219	.9925	.1228
8°	.1392	.9903	.1405
9°	.1564	.9877	.1584
10°	.1736	.9848	.1763
11°	.1908	.9816	.1944
12°	.2079	.9781	.2126
13°	.2250	.9744	.2309
14°	.2419	.9703	.2493
15°	.2588	.9659	.2679
16°	.2756	.9613	.2867
17°	.2924	.9563	.3057
18°	.3090	.9511	.3249
19°	.3256	.9455	.3443
20°	.3420	.9397	.3640
21°	.3584	.9336	.3839
22°	.3746	.9272	.4040
23°	.3907	.9205	.4245
24°	.4067	.9135	.4452
25°	.4226	.9063	.4663
26°	.4384	.8988	.4877
27°	.4540	.8910	.5095
28°	.4695	.8829	.5317
29°	.4848	.8746	.5543
30°	.5000	.8660	.5774
31°	.5150	.8572	.6009
32°	.5299	.8480	.6249
33°	.5446	.8387	.6494
34°	.5592	.8290	.6745
35°	.5736	.8192	.7002
36°	.5878	.8090	.7265
37°	.6018	.7986	.7536
38°	.6157	.7880	.7813
39°	.6293	.7771	.8098
40°	.6428	.7660	.8391
41°	.6561	.7547	.8693
42°	.6691	.7431	.9004
43°	.6820	.7314	.9325
44°	.6947	.7193	.9657
45°	.7071	.7071	1.0000

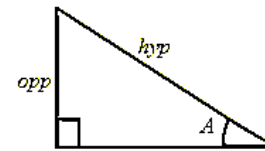
Angle	Sine	Cosine	Tangent
46°	.7193	.6947	1.0355
47°	.7314	.6820	1.0724
48°	.7431	.6691	1.1106
49°	.7547	.6561	1.1504
50°	.7660	.6428	1.1918
51°	.7771	.6293	1.2349
52°	.7880	.6157	1.2799
53°	.7986	.6018	1.3270
54°	.8090	.5878	1.3764
55°	.8192	.5736	1.4281
56°	.8290	.5592	1.4826
57°	.8387	.5446	1.5399
58°	.8480	.5299	1.6003
59°	.8572	.5150	1.6643
60°	.8660	.5000	1.7321
61°	.8746	.4848	1.8040
62°	.8829	.4695	1.8807
63°	.8910	.4540	1.9626
64°	.8988	.4384	2.0503
65°	.9063	.4226	2.1445
66°	.9135	.4067	2.2460
67°	.9205	.3907	2.3559
68°	.9272	.3746	2.4751
69°	.9336	.3584	2.6051
70°	.9397	.3420	2.7475
71°	.9455	.3256	2.9042
72°	.9511	.3090	3.0777
73°	.9563	.2924	3.2709
74°	.9613	.2756	3.4874
75°	.9659	.2588	3.7321
76°	.9703	.2419	4.0108
77°	.9744	.2250	4.3315
78°	.9781	.2079	4.7046
79°	.9816	.1908	5.1446
80°	.9848	.1736	5.6713
81°	.9877	.1564	6.3138
82°	.9903	.1392	7.1154
83°	.9925	.1219	8.1443
84°	.9945	.1045	9.5144
85°	.9962	.0872	11.4301
86°	.9976	.0698	14.3007
87°	.9986	.0523	19.0811
88°	.9994	.0349	28.6363
89°	.9998	.0175	57.2900

Pythagorean Theorem



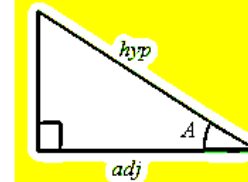
$$a^2 + b^2 = c^2$$

Sine



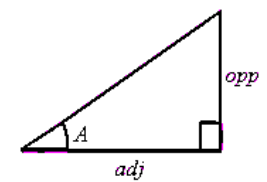
$$\text{Sine of angle A} = \frac{\text{Opp}}{\text{Hyp}}$$

Cosine



$$\text{Cosine of angle A} = \frac{\text{Adj}}{\text{Hyp}}$$

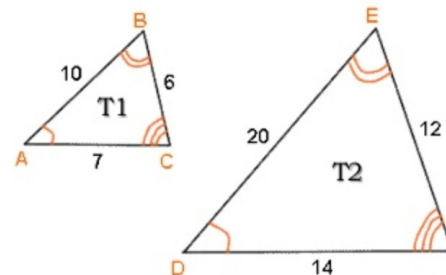
Tangent



$$\text{Tangent of angle A} = \frac{\text{Opp}}{\text{Adj}}$$

Similar Triangles

$$\triangle DEF \sim \triangle ABC$$



Corresponding angles are congruent

$$\angle A \cong \angle D$$

$$\angle B \cong \angle E$$

$$\angle C \cong \angle F$$

Corresponding sides are proportional:

$$\frac{DE}{AB} = \frac{EF}{BC} = \frac{DF}{AC}$$

Scale factor - ratio without variables

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