

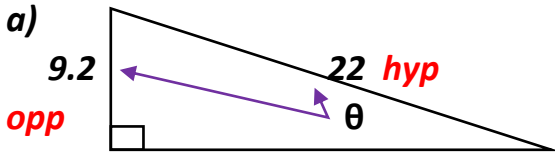
## Trig- Mix-up Day

Today we mix all the ratios together

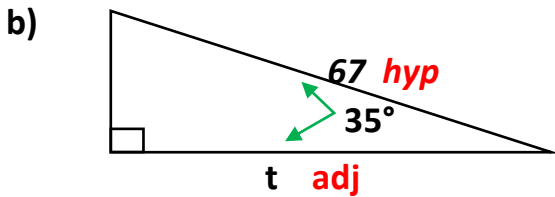
We will use  $\sin$ ,  $\cos$  or  $\tan$  to find both sides and angles

The key concepts is identifying which ratio applies to a given problem

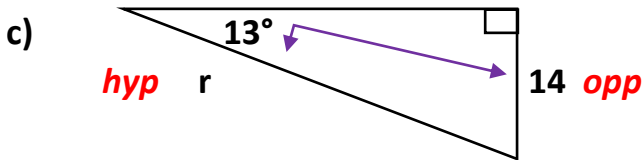
Find the requested unknowns accurate to 1 decimal place



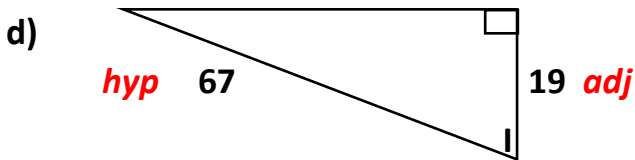
$$\sin \theta = \frac{9.2}{22} \rightarrow \text{2nd } \sin\left(\frac{9.2}{22}\right) \quad \theta = 24.7^\circ$$



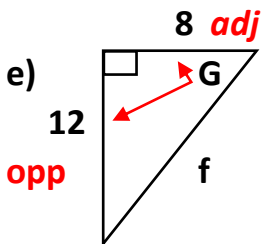
$$\cos 35^\circ = \frac{t}{67} \rightarrow \quad t = 54.9$$



$$\sin 13^\circ = \frac{14}{r} \rightarrow r = \frac{14}{\sin 13} \quad r = 62.2$$

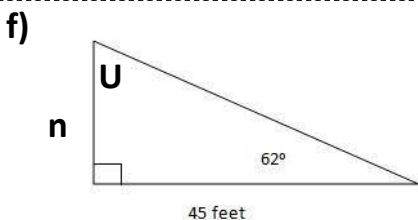


$$\cos I = \frac{19}{67} \rightarrow \text{2nd } \cos\left(\frac{19}{67}\right) \quad I = 73.5^\circ$$



$$12^2 + 8^2 = f^2 \quad f = 14.4$$

$$\tan G = \frac{12}{8} \rightarrow \text{2nd } \tan\left(\frac{12}{8}\right) \quad G = 56.3^\circ$$



$$U = 180 - 90 - 62 \quad U = 28^\circ$$

$$\tan 62^\circ = \frac{n}{45} \rightarrow \quad n = 84.6$$

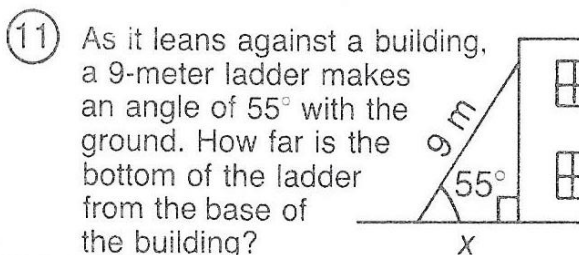
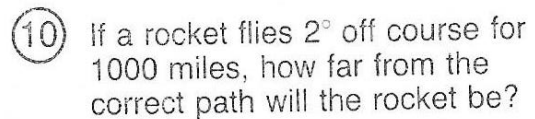
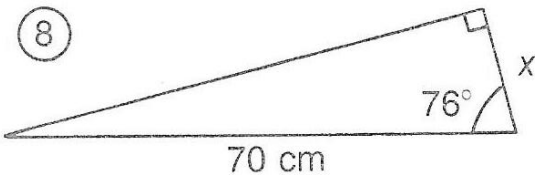
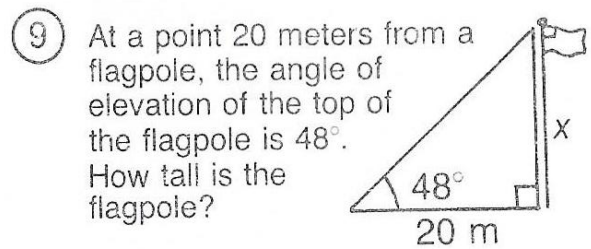
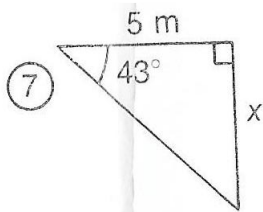
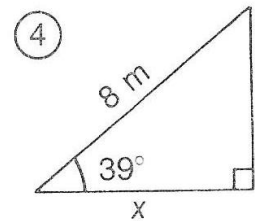
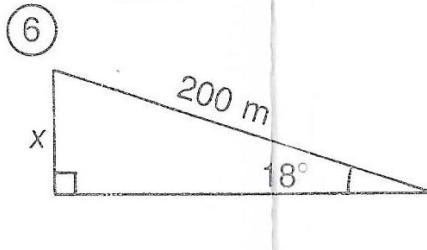
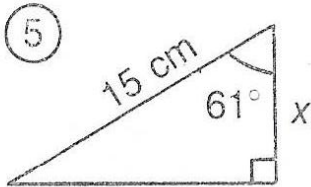
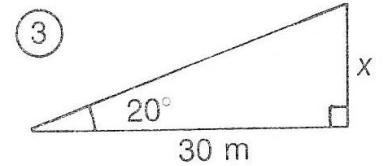
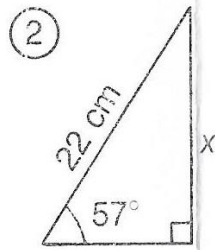
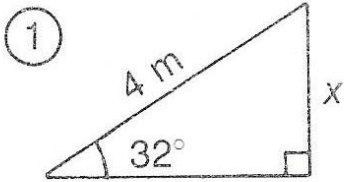
notice how a poorly drawn diagram leads to answers that LOOK wrong!

Assignment = worksheet

**Trig Mix-up, The Grade 10 Trig Challenge ... can you solve 51 questions in 50 minutes 😊**

**What do they call the big grass field of an orbiting Satellite?**

TH 4.7 m	AP 5.4 m	ET 5.2 m	E 2.1 m	AR 23.5 m	UN 6.2 m	A 22.2 m	KI 28.7 mi	SS 61.8 m
RU 18.5 cm	NS 3.2 m	TO 7.3 cm	P 63.6 m	UP 34.9 mi	A 15.3 cm	KY 10.9 m	NI 16.9 cm	CE 17.1 cm

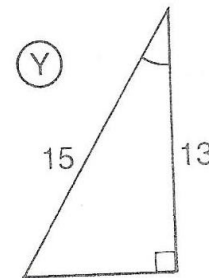
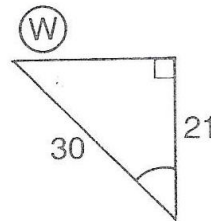
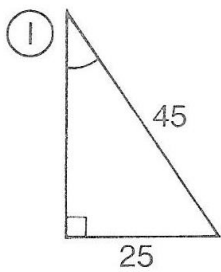
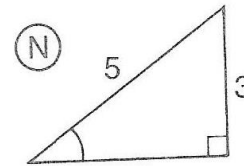
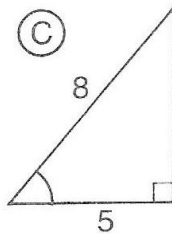
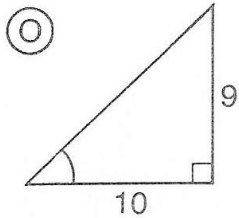


EUROPE:

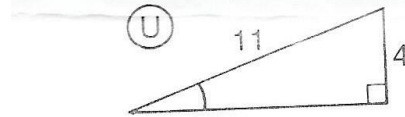
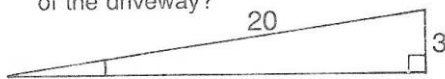
30°	42°	21°	24°	74°	2°	21°	24°	37°	49°	2°	42°	17°	32°	5°	2°
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UNDERGROUND GARAGE:

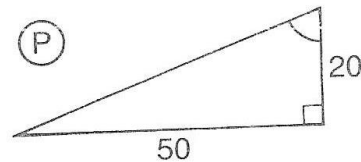
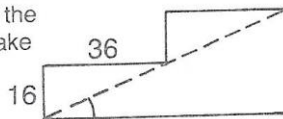
46°	5°	9°	9°	28°	2°	42°	7°	46°	5°	9°	9°	7°	51°	5°	24°	68°	34°	2°
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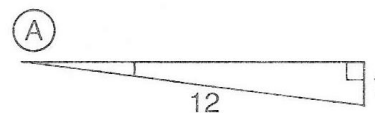
- ⓐ A driveway is built on an incline so that it rises 3 m over a distance of 20 m. What is the angle of elevation of the driveway?



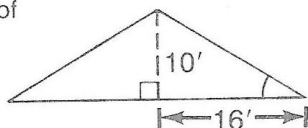
- ⓐ Each step of a stairway rises 16 cm for a tread width of 36 cm. What angle does the stairway make with the floor?



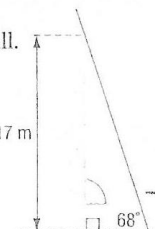
- ⓐ A train decreases its altitude by 8 m when traveling along 200 m of track. Find the angle of depression of the track.



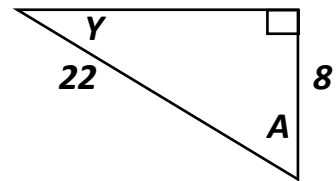
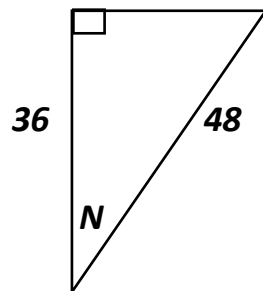
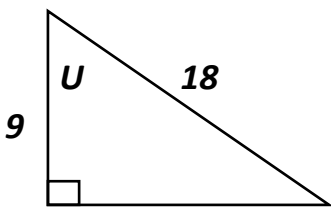
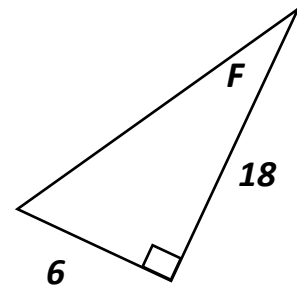
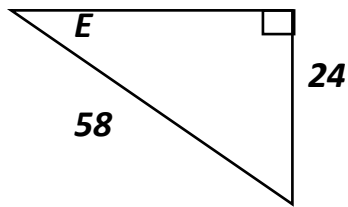
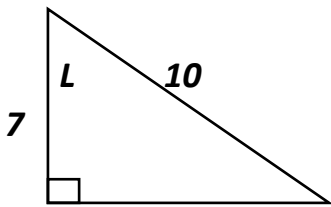
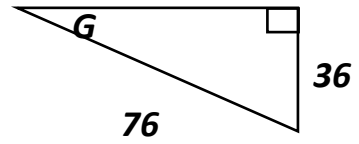
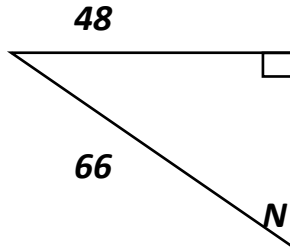
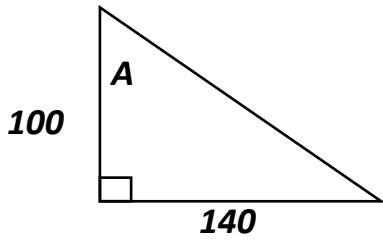
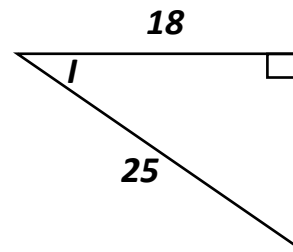
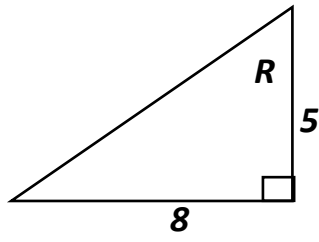
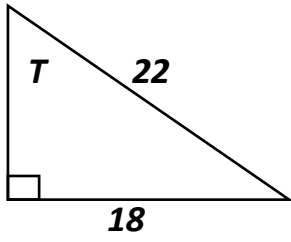
- ⓐ A roof is constructed as shown in the diagram. Find the pitch (angle of elevation) of the roof.



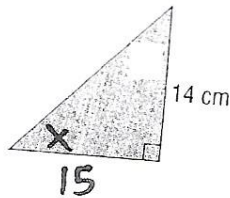
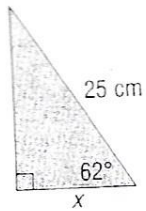
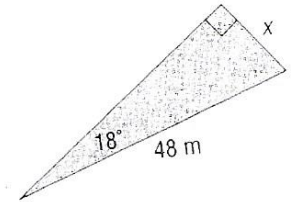
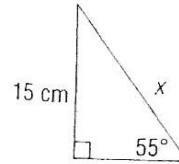
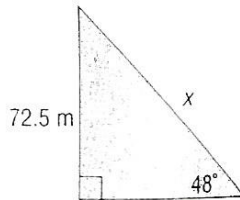
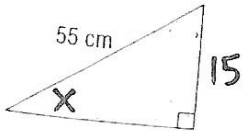
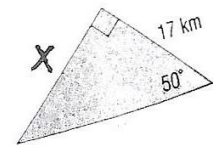
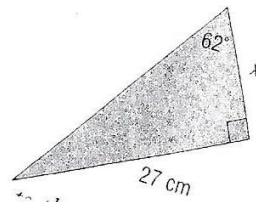
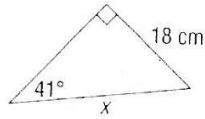
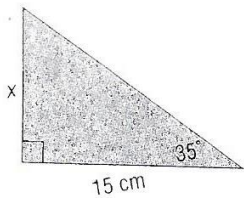
The Commodity Exchange Tower in Winnipeg is 117 m tall. When the sun's rays make an angle of  $68^\circ$  with the ground, what is the length of the building's shadow on level ground, to the nearest metre?



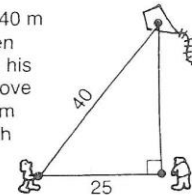
Find the requested angles



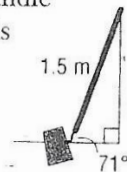
**Find side  $x$  or angle  $X$**



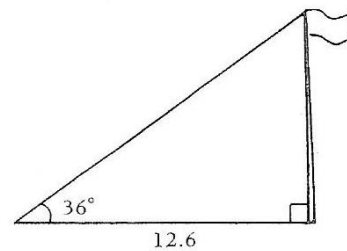
Jack has let out 40 m of kite string when he observes that his kite is directly above Jill. If Jack is 25 m from Jill, how high is the kite?



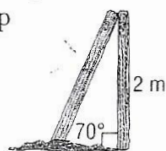
A 1.5-m hoe rests against the side of a garden shed. The angle the handle of the hoe forms with the ground is  $71^\circ$ . How far up the wall of the shed does the hoe reach, to the nearest tenth of a metre?



Jane must order a new rope for the flagpole. To find out what length of rope is needed, she observes that the flagpole casts a shadow 12.6 m long on the level ground. The sun's rays make a  $36^\circ$  angle with the ground.



A tree is splintered by lightning 2 m up its trunk, so that the top part of the tree touches the ground. The angle the top of the tree forms with the ground is  $70^\circ$ . How tall is the tree, to the nearest tenth of a metre?



- How tall is the pole?
- How much rope must she order?