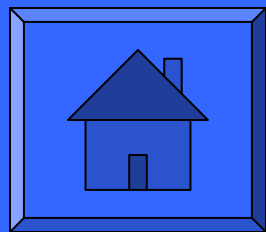
Special Triangles	Special Triangle Word Prob.	Trig. Ratios	Trig. Ratios Word Prob.	Challenge
200	200	200	200	200
400	400	400	400	400
600	600	600	600	600
800	800	800	800	800
1000	1000	1000	1000	1000

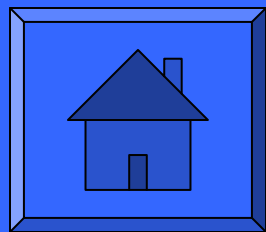
In a 45°-45°-90° triangle, if one leg is 5cm, what is the length of the other leg?

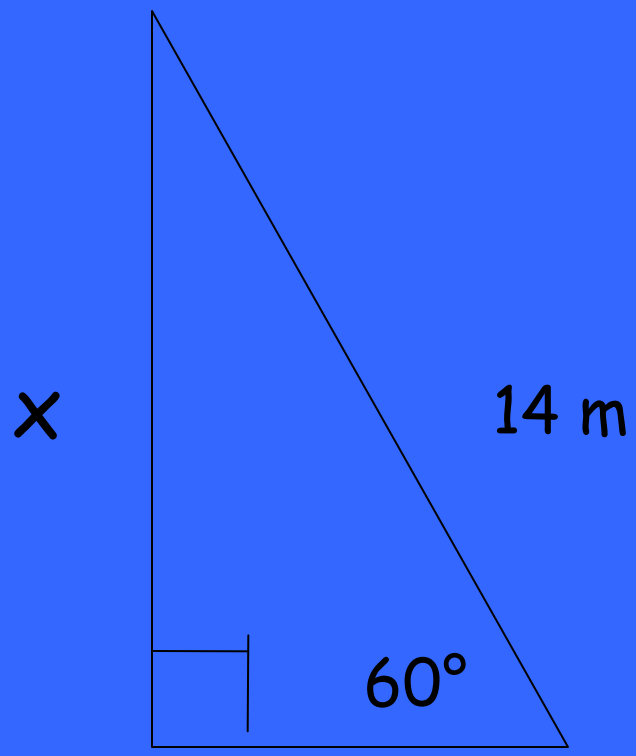
5 cm



In a 45°-45°-90° triangle, if one leg is 6cm, what is the length of the hypotenuse?

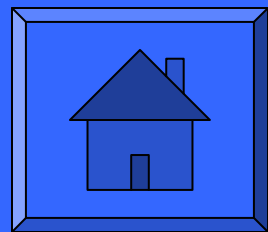
$6\sqrt{2}$ cm

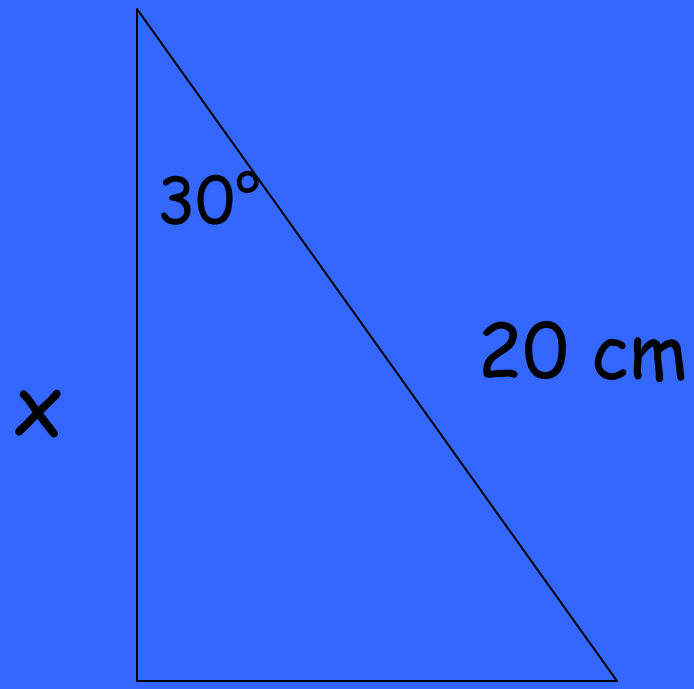




Find x

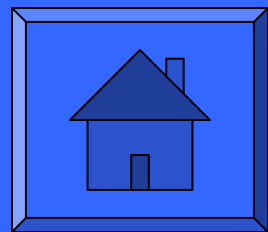
$$X = 7\sqrt{3}\ m$$

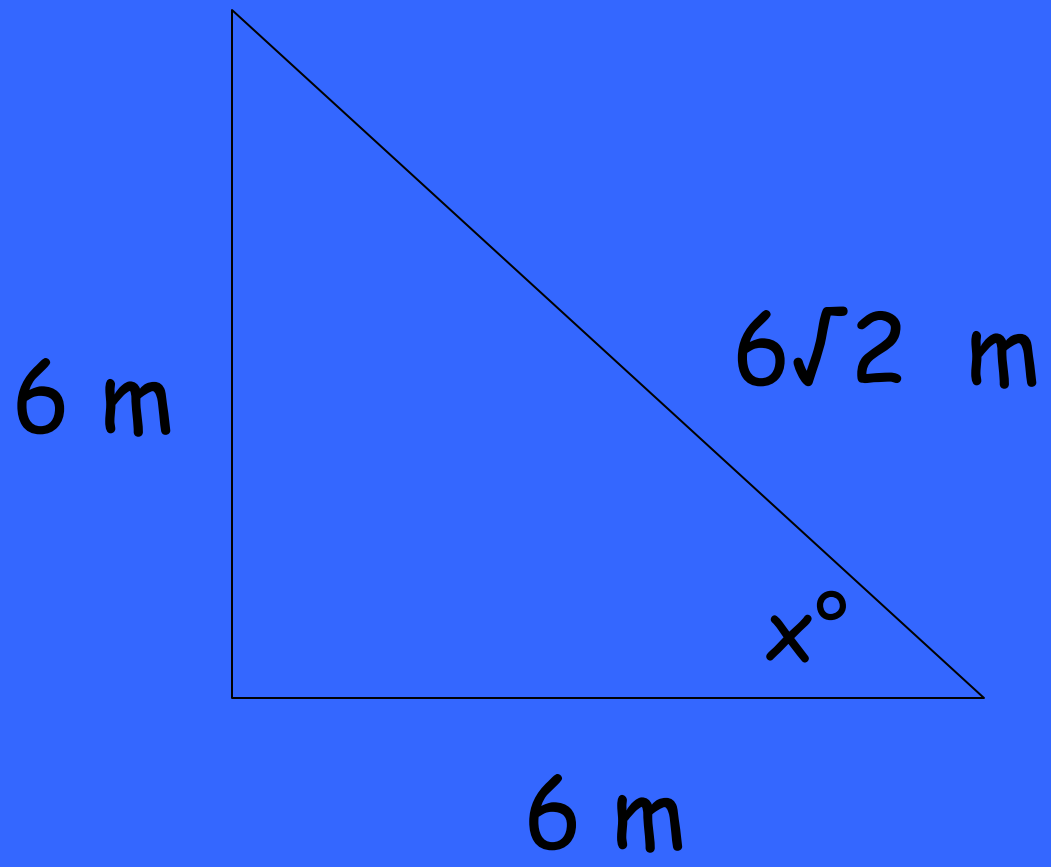




Find x

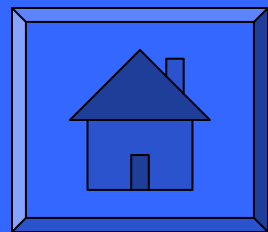
$10\sqrt{3}$ cm

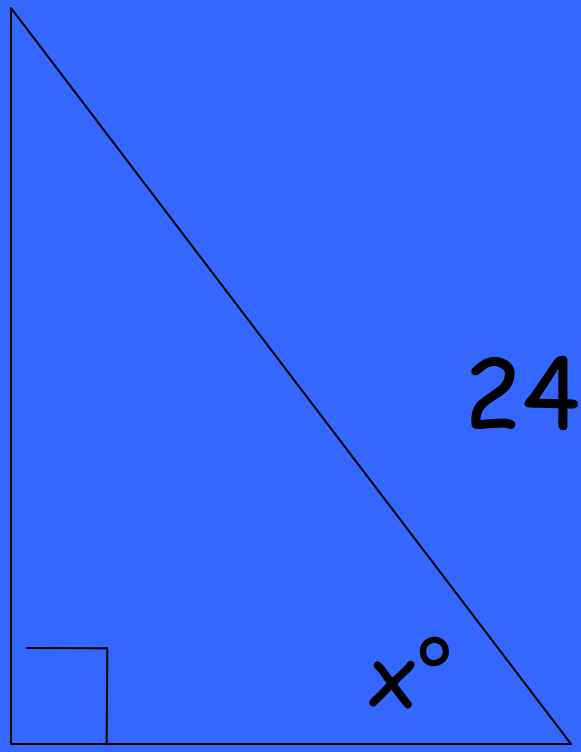




Find x°

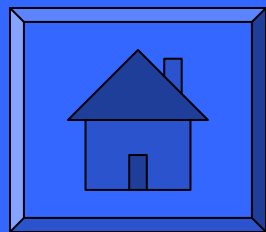
$X = 45°$





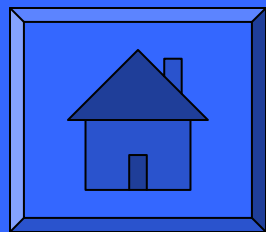
Find x°

$X = 60°$

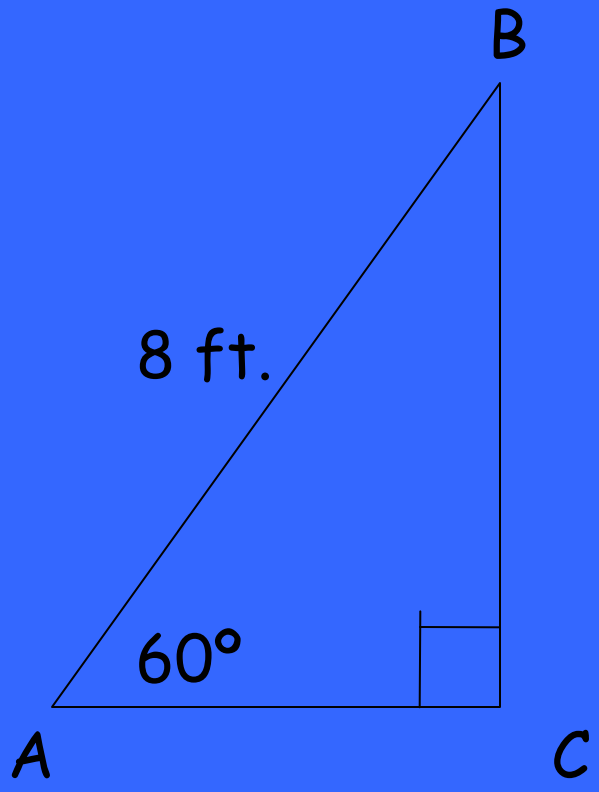


The length of one diagonal of a rhombus is 12 cm. The measure of the angle opposite that diagonal is 60°. What is the perimeter of the rhombus?

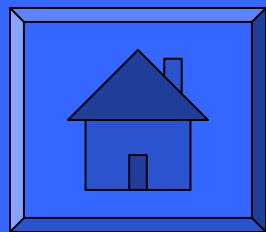
The perimeter of the rhombus is 48 cm.



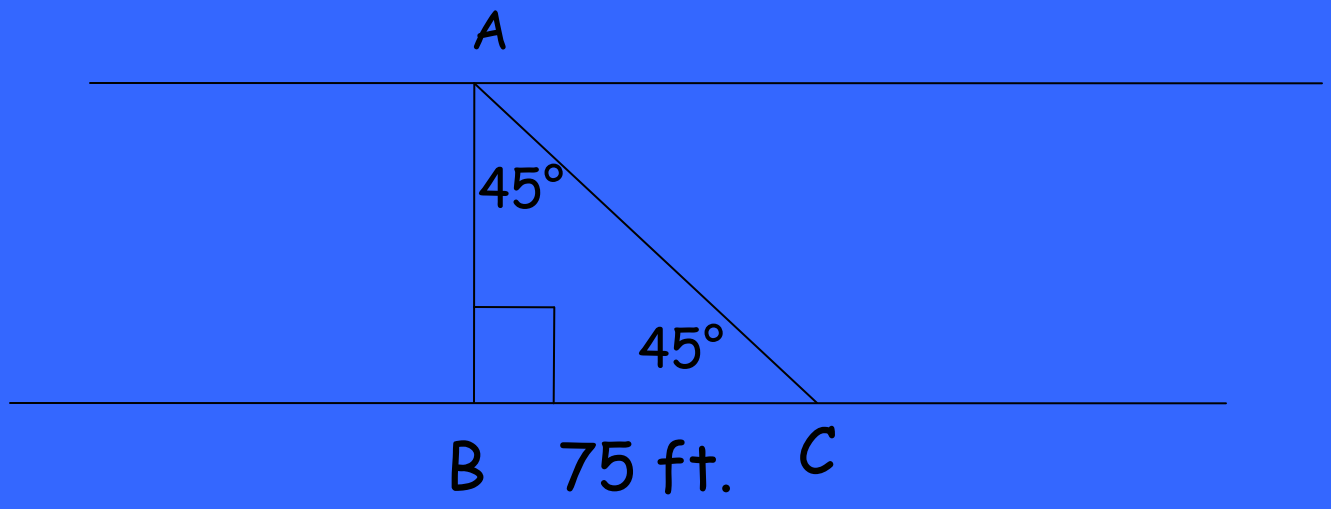
The angle formed by the roof of a monument measures 60°. Since this is such a steep angle, an architect places a support beam at a slant distance of 8 ft. along the roof from the corner. How tall is the support beam ? Leave answer in radical form.



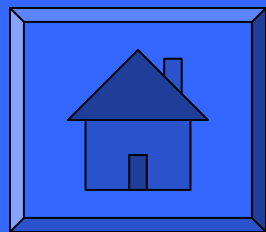
The support beam is $4\sqrt{3}$ ft. tall.



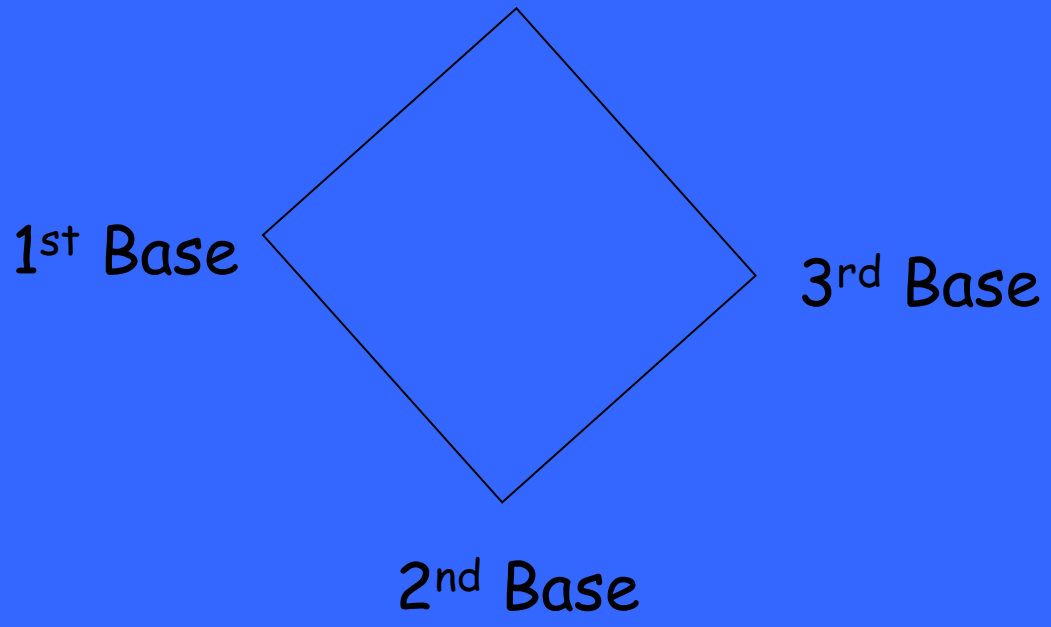
Mark tries to swim across a river from point A to point B. Because of the current, he reaches point C instead. How far does he swim? Leave answer in radical form.



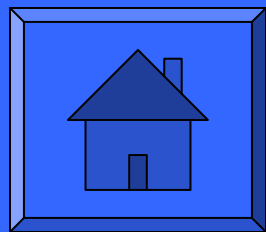
Mark swam $75\sqrt{2}$ ft.



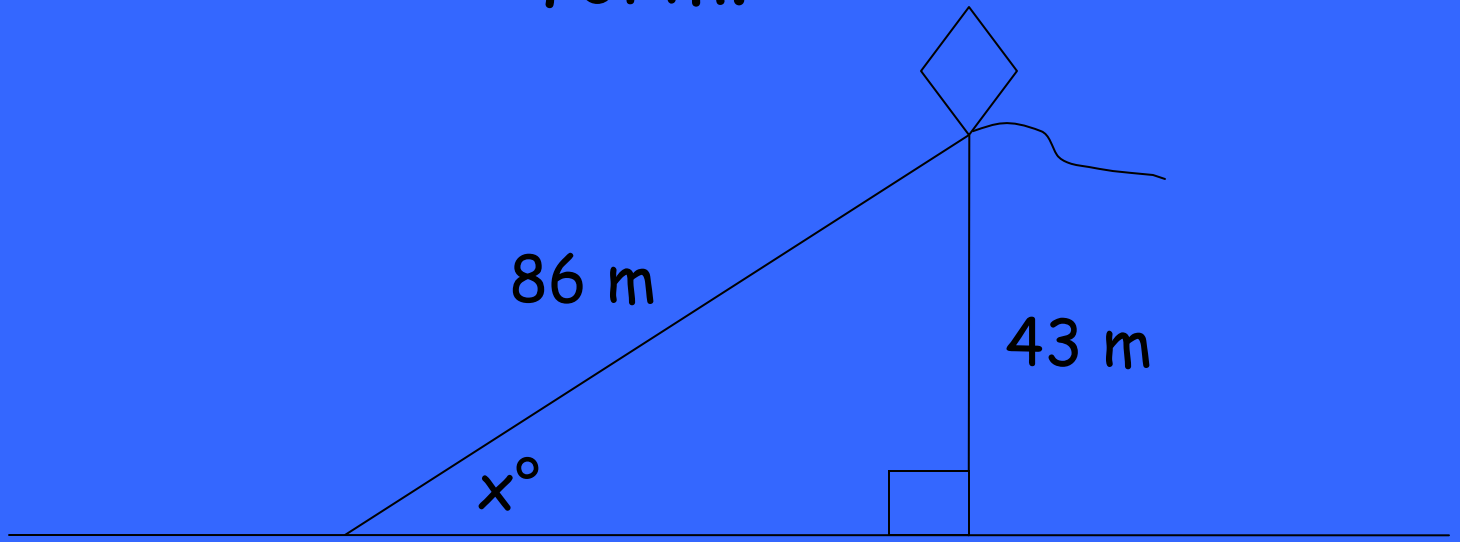
A baseball diamond is a square with sides that are 90 ft. long. Find the distance from first base to third base. Leave the answer in radical form.



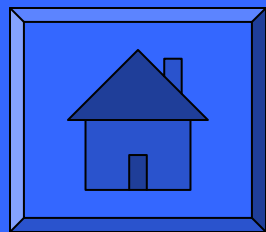
The distance from 1st base to 3rd base is $90\sqrt{2}$ ft.

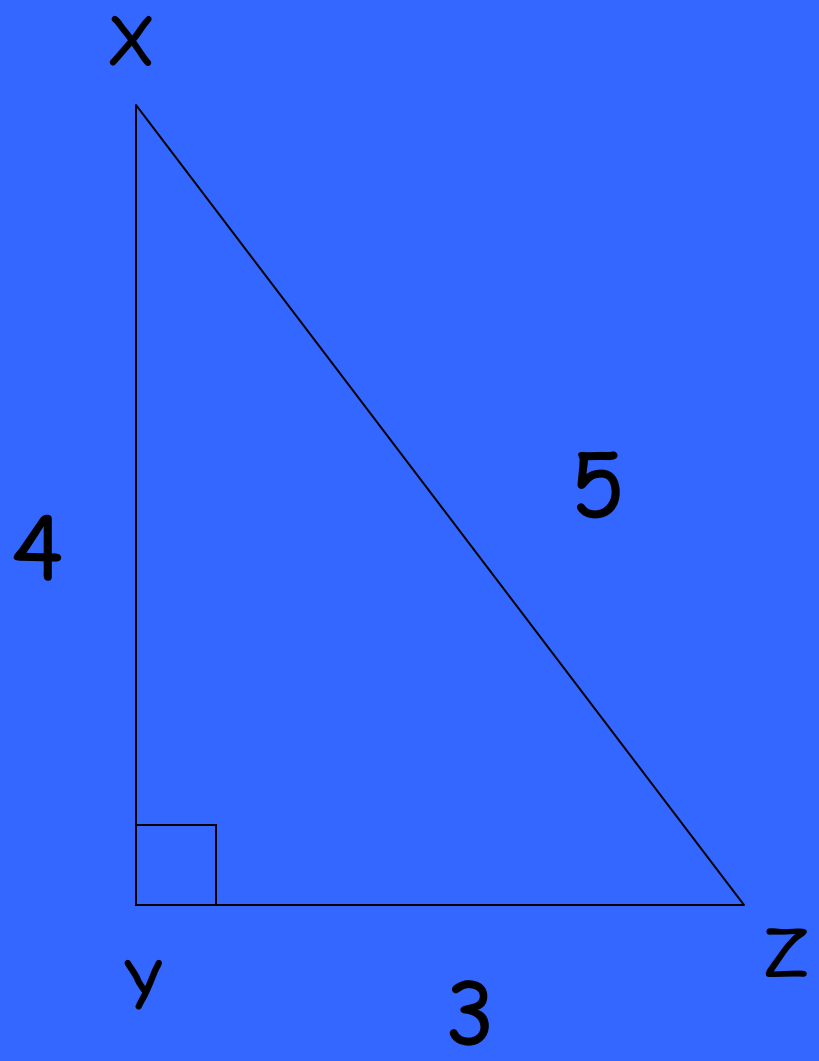


The length of a kite string fastened to the ground is 86 m. The vertical height of the kite is 43 m. Find the angle that the string makes with the ground. Leave your answer in radical form.



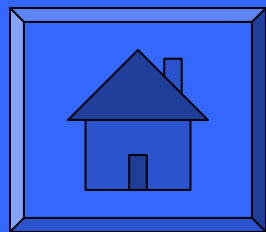
The string makes a 30° angle with the ground.

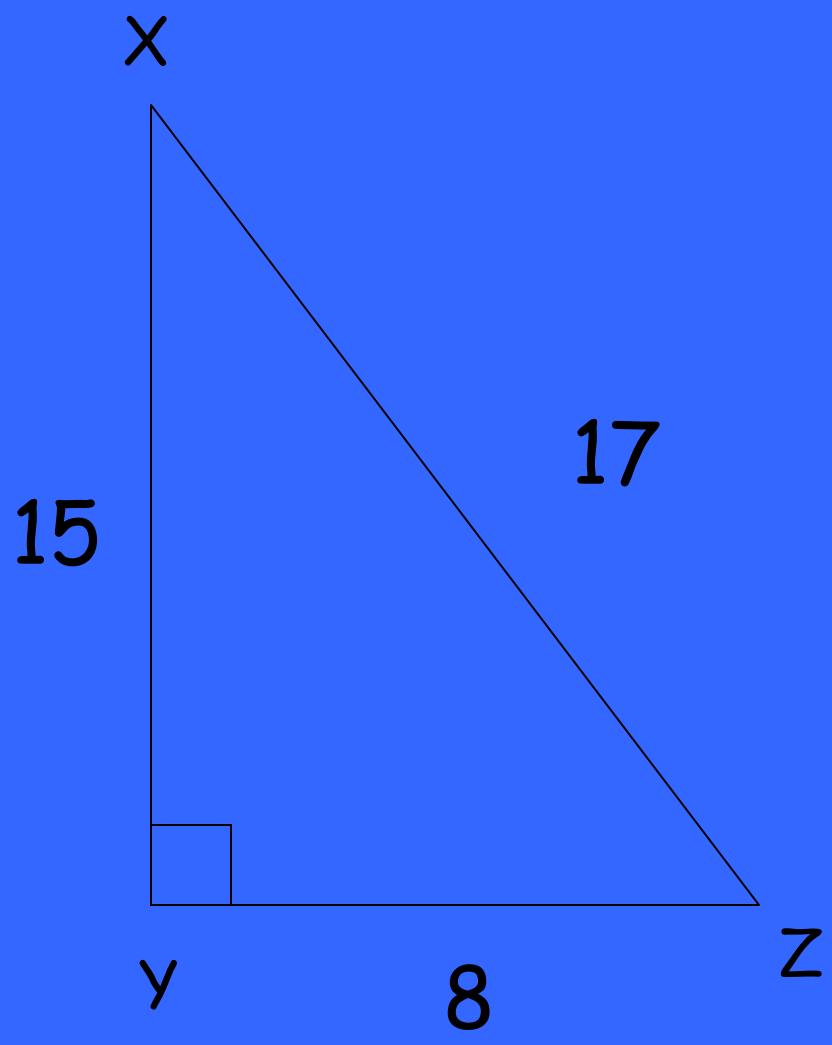




Find the sin Z

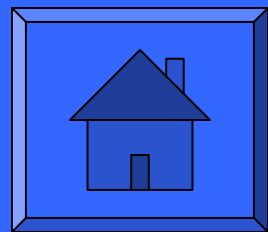
The sin Y =4/5

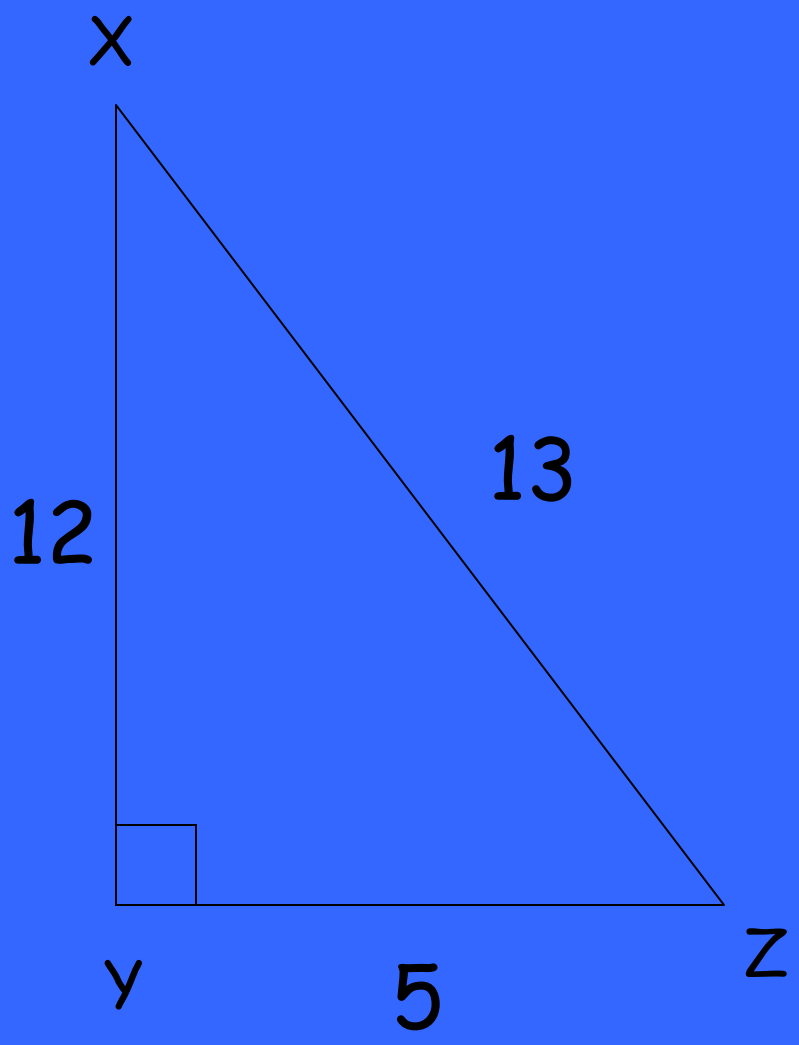




Find the cos x

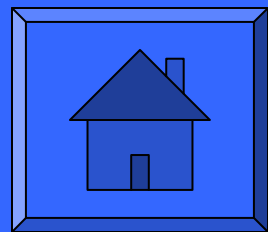
The cos x =15/17

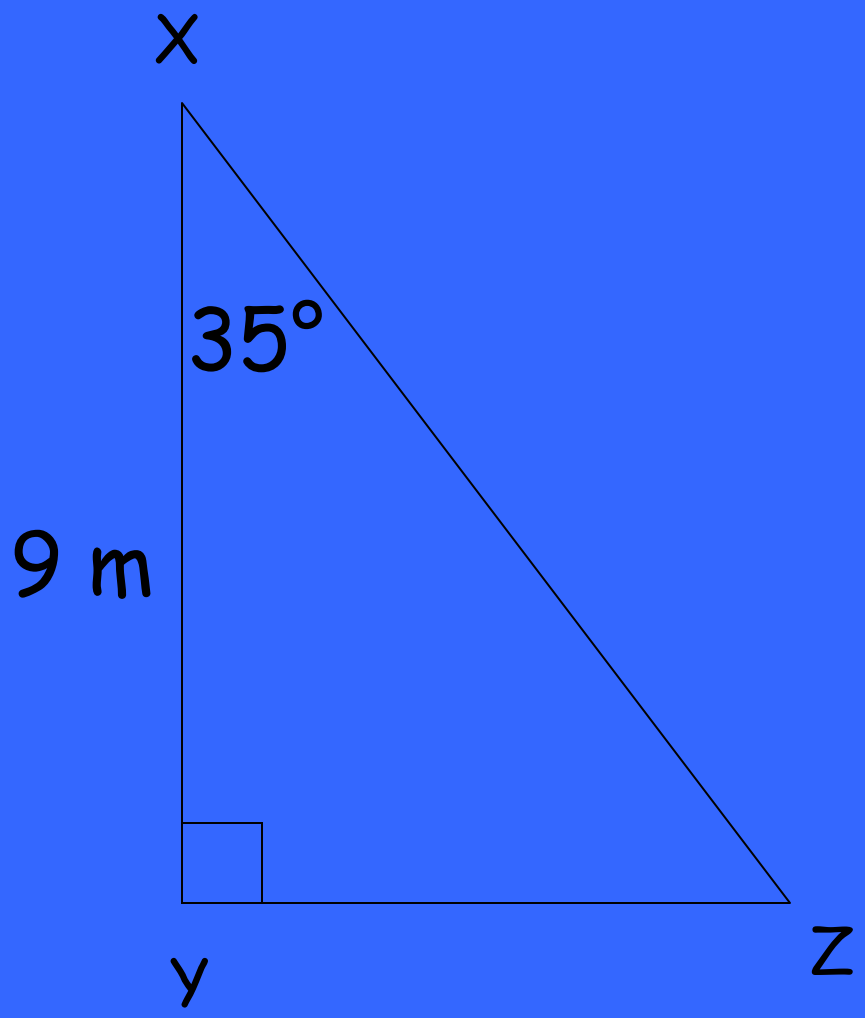




Find the tan z

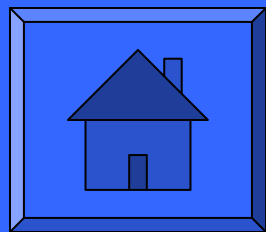
The tan z = 12/5

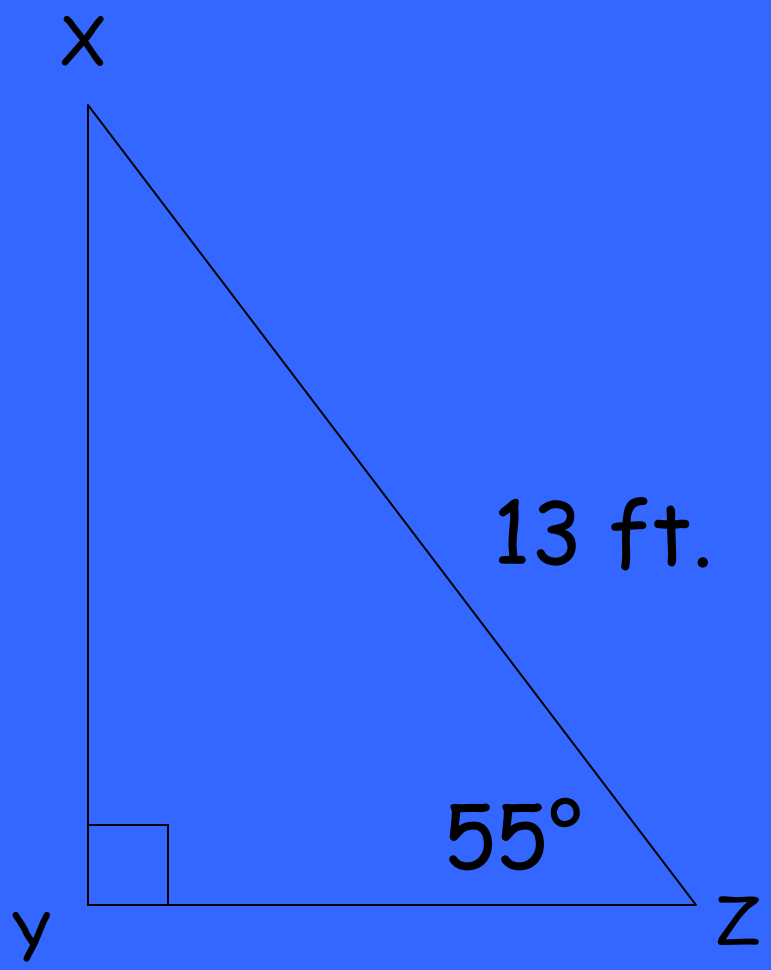




Find the area of triangle XYZ
Leave answer in radical form.

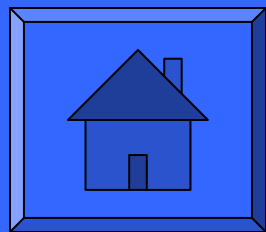
The area of the triangle is $28.358\ m^2$



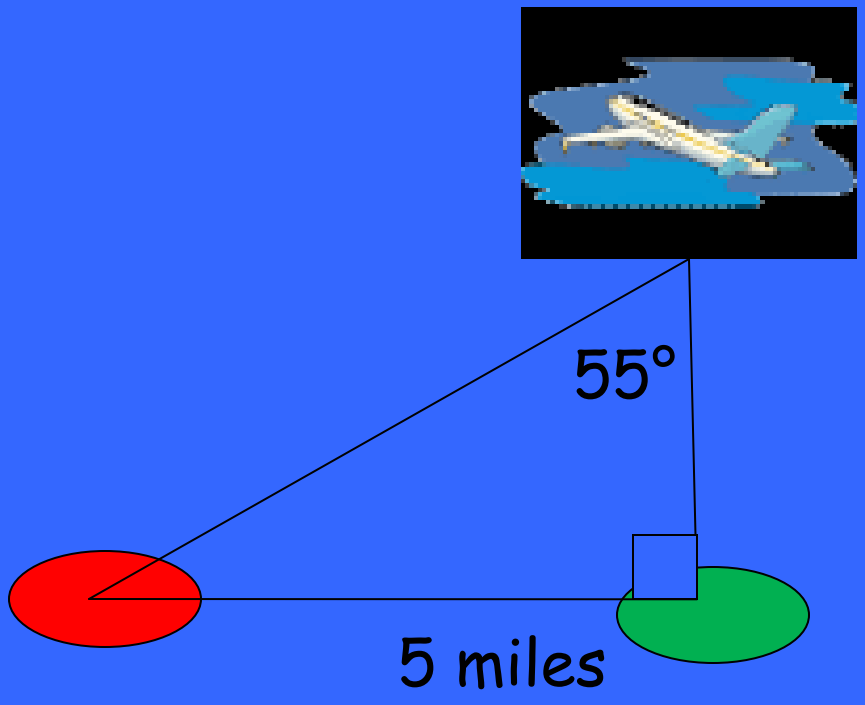


Find the perimeter of triangle XYZ
Leave answer in radical form.

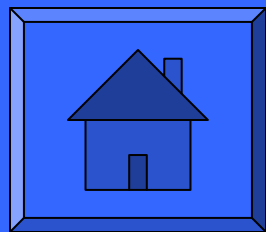
The perimeter of the triangle is approximately 31.105 ft.



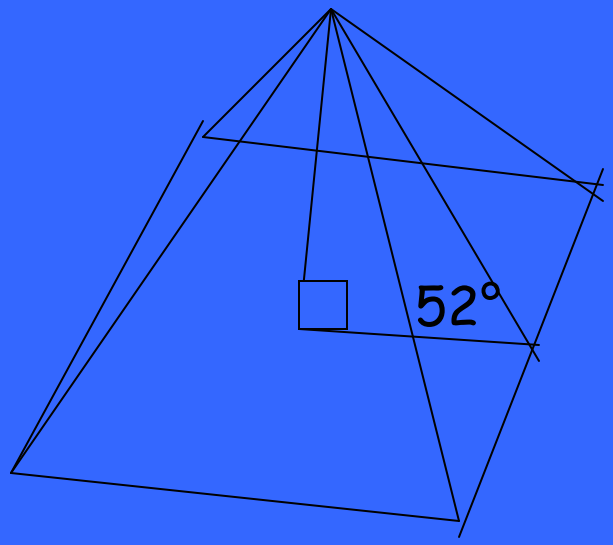
A photographer is taking pictures of two islands from a plane. When the plane is directly above Green Island, the line of site to Red Island forms a 55°angle. How high above Green Island is the plane?



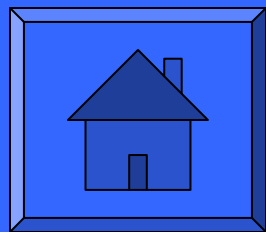
The plane is approximately
3.5 miles
above the Green Island.



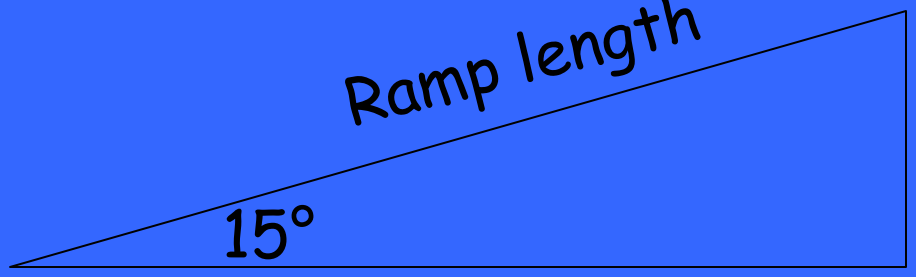
All but two Egyptian pyramids have faces that are inclined at 52° angles. An archaeologist finds an eroding pyramid with a square base having a side length of 84 m. How tall was the pyramid, if the faces are inclined at 52°?



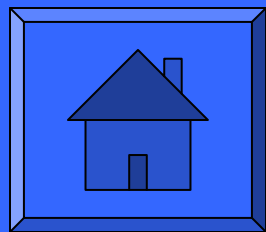
The height of the pyramid is approximately 53.75 m.



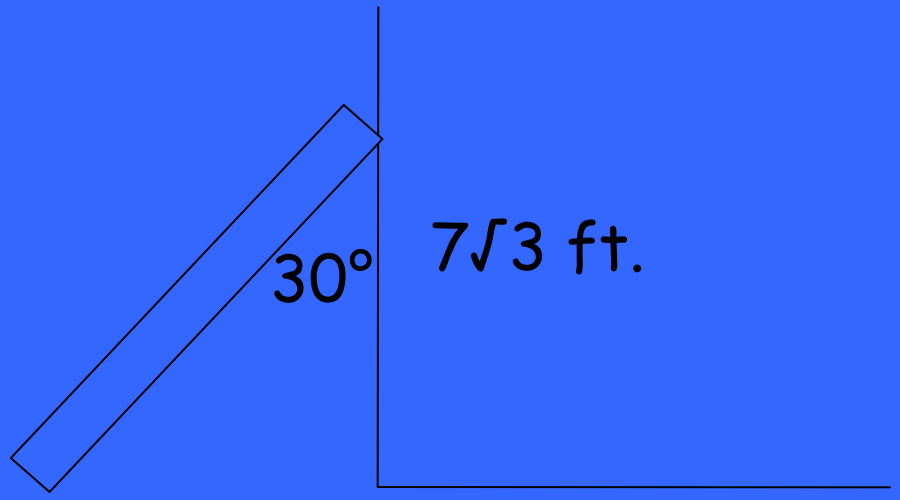
Amanda and Tom are given the task of designing a ramp, so that people in wheelchairs can get into the Skiles Classroom Building. The rise has to be 5 feet and the angle of the ramp has to be 15° . How long does the ramp have to be?



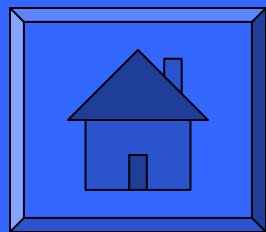
The ramp will be approximately 19.32 feet.



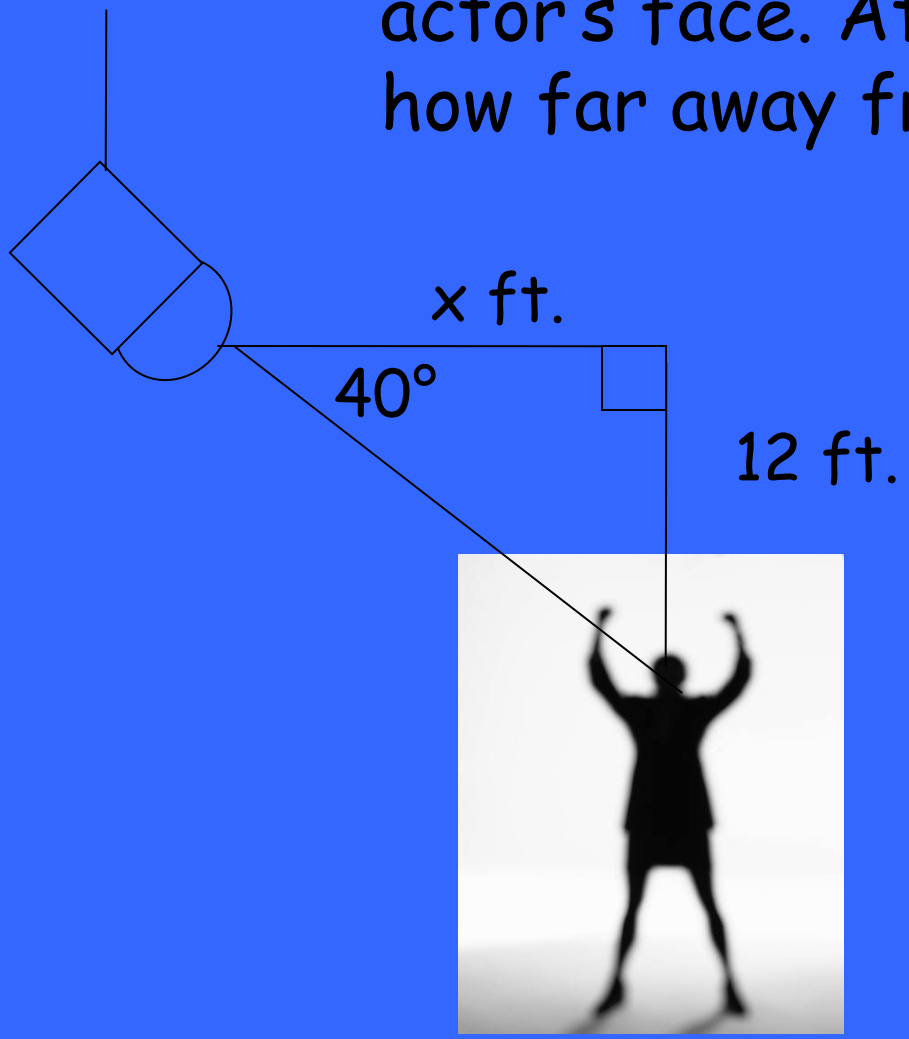
A ladder is leaning against a building as shown below. The ladder reaches a height of $7\sqrt{3}$ on the building. The ladder makes an angle of 30° with the wall. How long is the ladder?



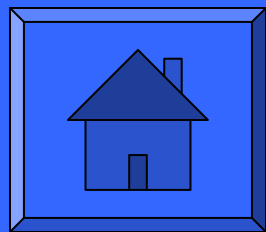
The ladder is 14 feet long.



A lighting technician needs to shine a spotlight onto an actor's face. The light being directed is attached to a ceiling that is 12 feet above the actor's face. At an angle of 40° , how far away from the actor should the light be?

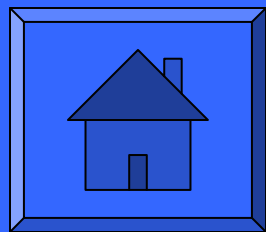


The actor should be approximately 14.3 feet away from the spotlight.



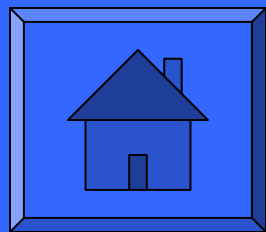
A 15-ft. ladder leaning against a wall makes a 54° angle between the ground and the ladder. To the nearest foot, how far up the wall does the ladder reach?

The ladder is approximately 12.14 ft. up the side of the building.



John and Alex are standing on one side of the river. Alex stands directly in front of a monument they see on the other side of the river. Using a compass, Alex walks along the river in a direction perpendicular to his original line of sight until the compass reading has changed by 45°. John measures the distance Alex walked as 30 m. What is the width of the river?

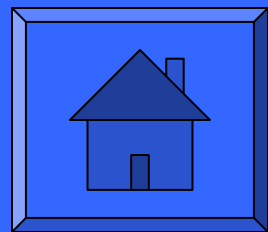
The river is 30 m wide.



In a right triangle the two complementary angles are $\angle A$ and $\angle B$.

What is the relationship between the sine and cosine of these angles?

The sin A = cos B and sin B = cos A.



An airport is tracking the path of one of its incoming flights. If the distance to the plane is 850 ft. and the angle of elevation from the ground is 30°, what is the altitude of the plane?

The plane is approximately flying at an altitude of 490. 75 ft.