Trigonometry Applications Problems

For each problem read the question at least twice before drawing a large clear diagram. Identify the right-angles triangle and do the trigonometry. Check that you have answered the question. Answer correct to the nearest whole number.

C.   A rectangle is 100 metres long and 50 metres wide. Find the acute angle between the diagonals.

E.   A marksman aims at a target bullseye 60 metres away but just before he pulls the trigger he is distracted and swings the rifle and angle of a quarter of a degree. By how many centimetres will the bullet miss the bullseye?

I.   A gable roof (isosceles triangle-shaped) has a vertical height of 2.1 metres and the ceiling is 10.9 metres from one side to the other. Find the pitch (angle) of the roof.

P.   A searchlight shines on a flying saucer vertically above is. Another searchlight shines on the saucer but it's beam makes an angle of 15° to the vertical. The lights are 2 kilometers apart. Find the altitude of the flying saucer, in metres.

R.   A line on a graph joins the origin to the point (6,15). What angle does the line make with the x axis?.

T.   A regular octagon with sides of 10 metres fits exactly inside a circle. Find the radius of the circle.

U.   A child sits on a swing which is not moving. The rope is 400 centimetres long and the child 's seat is 50 centimetres above the ground. The child swings and at the extremity of her movement the rope makes an angle of 41° with the vertical. How far above the ground is her seat now?

Illustration in reverse

26	68	148	13	53	21	7464