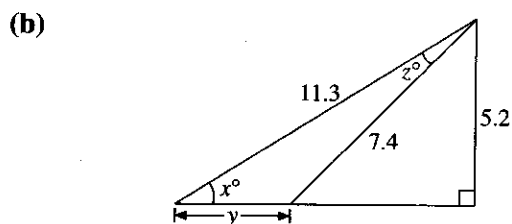
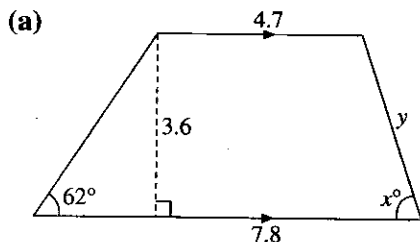
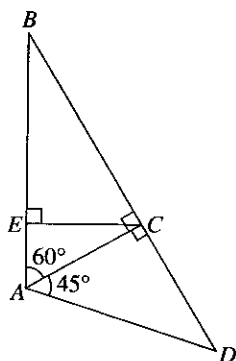


Do not do 18 a and 18 c

18. Find the unknown angles and sides marked  $x$ ,  $y$  and  $z$  in the following figures.



- 19.



In the figure,  $AC = 25$  cm. Find the length of

- (a)  $CE$ ,  
 (b)  $BE$ ,  
 (c)  $AB$ .

20. An aerial mast is supported by four wires attached to points on the ground each 57 m away from the foot of the mast. If each wire makes an angle of  $32^\circ$  with the horizontal, find the height of the mast.
21. To find the width of a river, a boy places a wooden peg at a point  $A$  on one side directly opposite an object  $B$  on the opposite bank. From  $A$ , he walks 50 m along the bank to a point  $C$ . He observes that  $\hat{ACB} = 34^\circ$ . Find the width of the river.
22. A ladder leans against a wall, touching a window sill, and makes an angle of  $62^\circ$  with the ground. Find the height of the window sill above the ground and the length of the ladder if the foot of the ladder is 3 m from the foot of the wall.
23. A 4 m plank rests on a wall 1.8 m high so that 1.2 m of it projects beyond the wall. Find  
 (a) the angle the plank makes with the wall,  
 (b) how far the foot of the ladder is from the foot of the wall.
24. A pendulum 45 cm long swings through a vertical angle of  $30^\circ$ . Find the height through which the pendulum bob rises.
25. A tree is  $x$  m high. The angle of elevation of its top from a point  $P$  on the ground is  $23^\circ$ . From another point  $Q$ , 10 m from  $P$  and in line with  $P$  and the foot of the tree, the angle of elevation is  $32^\circ$ . Find  $x$ .

18. (a)  $x = 71.8^\circ$ ,  $y = 3.79$                       (b)  $x = 27.4^\circ$ ,  $y = 4.77$ ,  $z = 17.2^\circ$   
19. (a) 21.7 cm                      (b) 37.5 cm                      (c) 50 cm                      20. 35.6 m  
21. 33.7 m                      22. 5.64 m, 6.39 m  
23. (a)  $50^\circ$                       (b) 2.1 m                      24. 1.53 cm                      25. 13.2 m