

3. Find

a) $\tan 27^\circ$

b) $\tan 38^\circ$

c) $\tan 65^\circ$

d) $\tan 81^\circ$

4. Find $\angle A$.

a) $\tan A = 1.4$

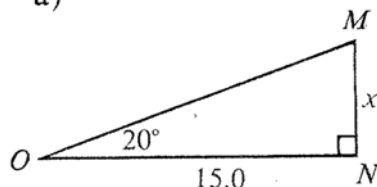
b) $\tan A = \frac{7}{4}$

c) $\tan A = 0.065$

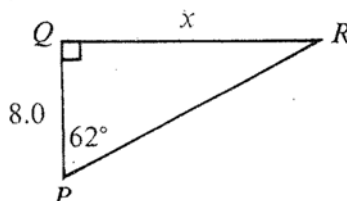
d) $\tan A = \frac{20}{7}$

5. Find the value of x .

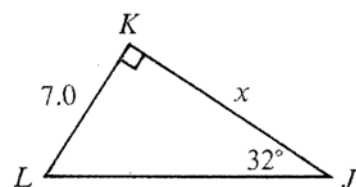
a)



b)



c)

6. In $\triangle ABC$, find $\angle B$ if AC is

a) 6

b) 12

c) 15

7. A rectangle measures 8 cm by 4 cm. Find the measures of the two acute angles formed at a vertex by a diagonal.

8. A guy wire fastened 50 m from the base of a television tower makes an angle of 55° with the ground. How high up the tower does the guy wire reach?

9. Find

a) $\sin 37^\circ$

b) $\cos 66^\circ$

c) $\cos 28^\circ$

d) $\sin 55^\circ$

10. Find $\angle A$.

a) $\cos A = 0.372$

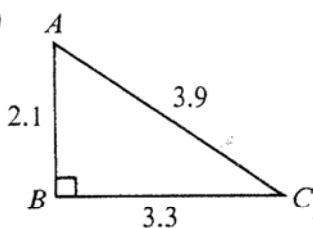
b) $\sin A = 0.590$

c) $\sin A = 0.805$

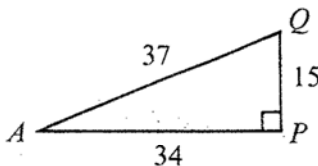
d) $\cos A = 0.070$

11. a) In each triangle, calculate $\sin A$ and $\cos A$.b) Find $\angle A$.

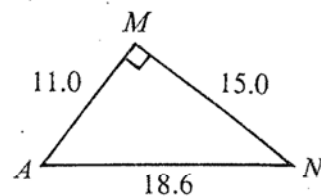
i)



ii)

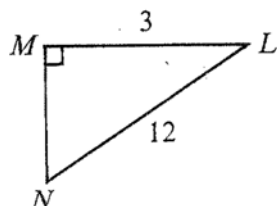


iii)

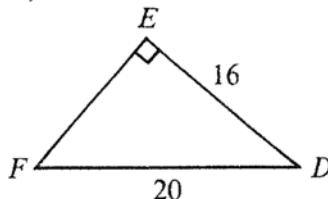


12. Determine the measures of the acute angles.

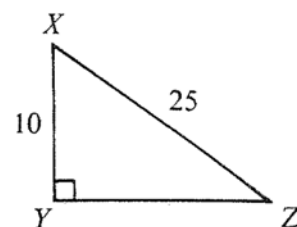
a)



b)

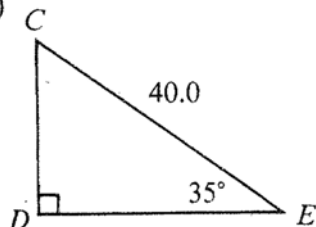


c)

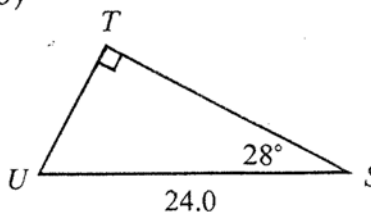


13. Determine the lengths of the sides not given.

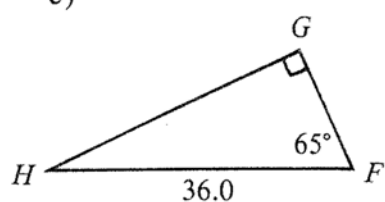
a)



b)



c)



Practice 5.1

14. In $\triangle ABC$, $\angle C = 90^\circ$ and $AC = 8.0$. Find AB and BC if
 a) $\angle A = 28^\circ$ b) $\angle A = 54^\circ$ c) $\angle B = 48^\circ$
15. From a distance of 60 m at ground level, the angle of elevation of the top of a flagpole is 32° . Determine the height of the flagpole to the nearest tenth of a metre.
16. When the foot of a ladder is 1.8 m from a wall, the angle formed by the ladder and the ground is 72° .
 a) How long is the ladder?
 b) How high up the wall does the ladder reach?
17. A tree casts a shadow 40 m long when the sun's rays are at an angle of 36° to the ground. How tall is the tree?
18. From the top of a building 70 m high, the angle of depression of an automobile on a road is 27° . How far is the automobile from the foot of the building?
19. A broadcasting tower is 255 m high. How far from the base of the tower is a surveyor who observes that the angle of elevation of the top of the tower is 38° ?
20. Two office towers are 30 m apart. From the 15th floor (40 m up) of the shorter tower, the angle of elevation of the top of the other tower is 70° . Find the
 a) angle of depression of the base of the taller tower from the 15th floor
 b) height of the taller tower

KEY

- b) about 1 340 000 km 3.a) 0.510 b) 0.781 c) 2.145
 d) 6.314 4.a) 55° b) 60° c) 4° d) 71° 5.a) 5.5 b) 15.0
 c) 11.2 6.a) 31° b) 50° c) 56° 7. 27° , 63° 8. 71.4 m
 9.a) 0.602 b) 0.407 c) 0.883 d) 0.819 10.a) 68° b) 36°
 c) 54° d) 86° 11.a) i) 0.846, 0.538 ii) 0.405, 0.919
 iii) 0.806, 0.591 b) i) 58° ii) 24° iii) 54° 12.a) 14° , 76°
 b) 53° , 37° c) 24° , 66° 13.a) 23.0, 32.8 b) 11.3, 21.2
 c) 15.2, 32.6 14.a) $AB = 9.1$, $BC = 4.3$ b) $AB = 13.6$,
 $BC = 11.0$ c) $AB = 10.8$, $BC = 7.2$ 15. 37.5 m
 16.a) 5.8 m b) 5.5 m 17. 29 m 18. 137.4 m 19. 327 m
 20.a) 53° b) 122.4 m