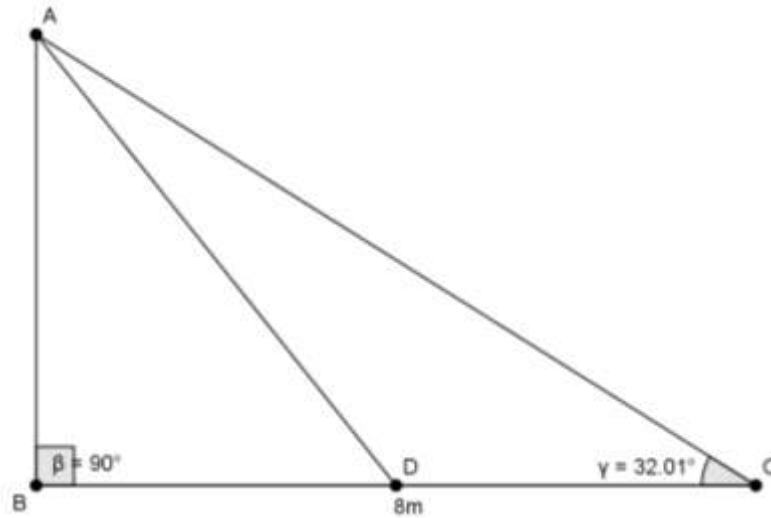


SHARP

Worksheet 15 – 2D Trigonometry Questions

Grade 10 – Mathematics

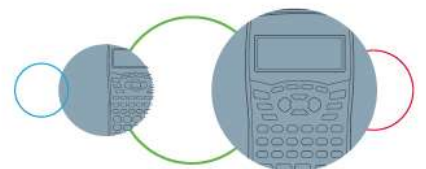
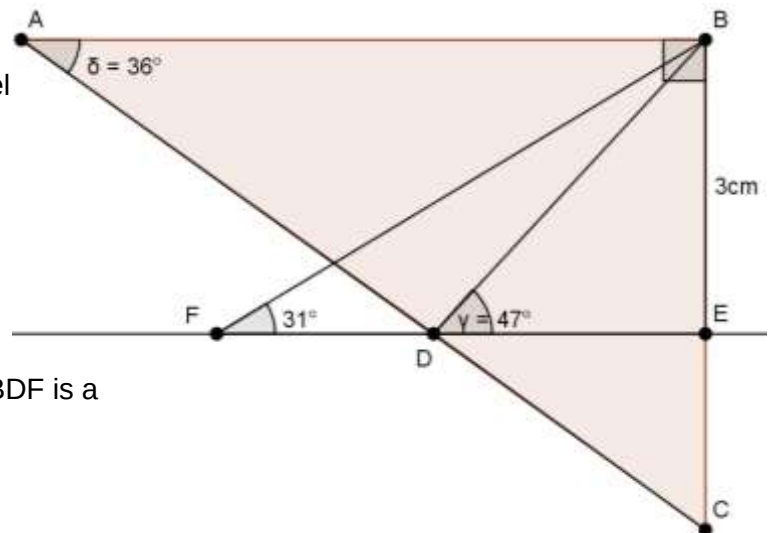
1. Given below is triangle ABC with D as the midpoint on BC. The length of BC is 8m.



- Find the length of AC. (R)
- Find the length of AB. (R)
- Find the angle $\widehat{ADB}$. (C)
- Find the angle of $\widehat{DAC}$. (P)

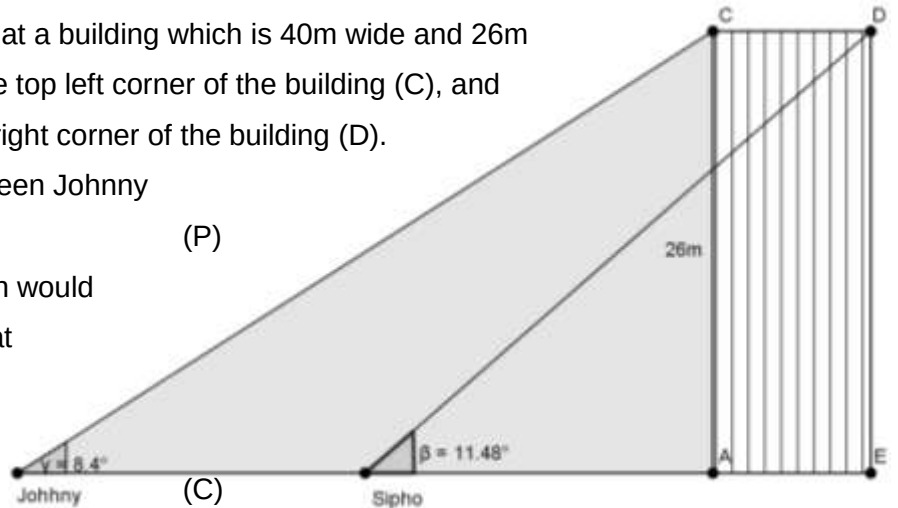
2. Given is triangle ABC with line FE parallel to AB. BE is 3cm. (Round off to one (1) decimal place in this question).

- Find the length of FD. (C)
- Find the length of EC. (C)
- Find the length of AD. (C)
- Use trigonometry to prove that $\triangle BDF$ is a scalene triangle. (P)



3. Johnny and Sipho are looking at a building which is 40m wide and 26m tall. Johnny is looking up at the top left corner of the building (C), and Sipho is looking up at the top right corner of the building (D).

- Find the distance between Johnny and Sipho. (P)
- What angle of elevation would Johnny be looking up at C with, if he was standing in the same place as Sipho? (C)
- How tall would the building be if Sipho needed a 60° angle of elevation to look up at the top right corner of the building? (C)
- If a 10m pole is added to the middle of the top of the building, and both Sipho and Johnny look up at this point using the original angles of elevation, what will the new distance between Johnny and Sipho be? (P)



4. Two friends are arguing about a route they should follow. Horatio says that travelling from E to B is the shortest route, while Ruan says that travelling from E to D and then to B is the shortest route. Who is right? (show all your working out, to the nearest km) (P)

