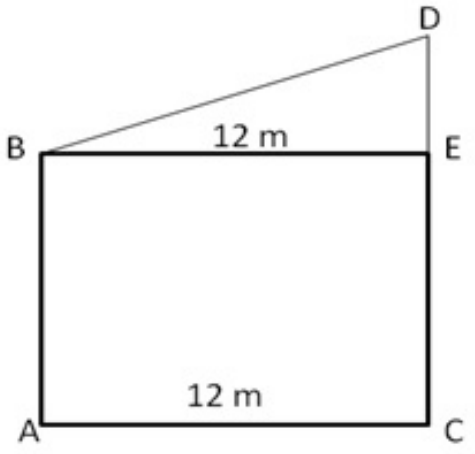
Exercise 4D

Question 6:

Let AB and CD be the given vertical poles.

Then,

AB = 9 m, CD = 14 m and AC = 12 m



Const: Draw, BE || AC.

Then,

CE = AB = 9m and BE = AC = 12 m

DE = (CD − CE)

= (14 − 9)

= 5 m

In right ΔBED, we have

$BD^2 = BE^2 + DE^2$

$= \left[(12)^2 + (5)^2\right] m^2$

$= (144 + 25)\, m^2$

$= 169\ m^2$

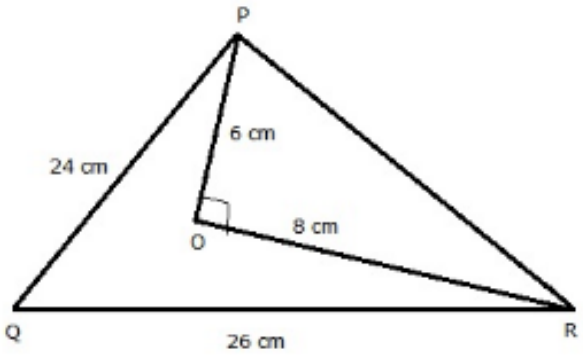
$\Rightarrow BD = \sqrt{169} = 13$ m

Hence, the distance between their tops is 13 m.

Question 7:

In ΔPQR, ∠QPR = 90°, PQ = 24 cm, and QR = 26cm^2

In ΔPOR, PO = 6 cm, QR = 8cm and ∠POR = 90°



In ΔPOR,

$PR^2 = PO^2 + OR^2$

$PR^2 = \left(6^2 + 8^2\right) cm^2 = (36 + 64) cm^2 = 100 cm^2$

$PR = \sqrt{100}\, cm = 10 cm$

In ΔPQR,

By Pythagoras theorem, we have

$QR^2 = QP^2 + PR^2$

$(26)^2 cm^2 = \left(24^2 + 10^2\right) cm^2$

$676 cm^2 = (576 + 100) cm^2$

$676 cm^2 = 676 cm^2$

Hence, $QR^2 = QP^2 + PR^2$

(sum of square of two sides equal to square of greatest side)
Hence, **Δ**PQR is a right triangle which is right angled at P.

********** END **********