

Pythagoras' Theorem

Solution

2. (a) $AC = \sqrt{3^2 + 4^2}$ (Pyth. Thm.)
 $= 5$

(b) $CD = \sqrt{12^2 + 5^2}$ (Pyth. Thm.)
 $= 13$

3. $(x - 20)^2 + 80^2 = (x + 30)^2$ (Pyth. Thm.)
 $x^2 - 40x + 400 + 6400 = x^2 + 60x + 900$
 $100x = 5900$
 $x = 59$
 $PQ = 39 \text{ cm}$

4. $PQ^2 = y^2 + (2y)^2$ (Pyth. Thm.)
 $= y^2 + 4y^2$
 $= 5y^2$
 $PQ = \sqrt{5}y$