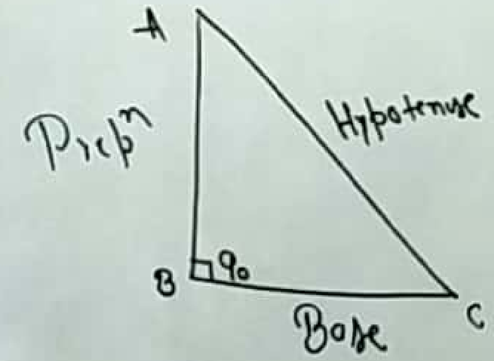
Similar Δ C-6

Pythagoras Theorem



$$\boxed{AC^2 = AB^2 + BC^2}$$

① (i) 7, 24, 25

$25^2 = 625$

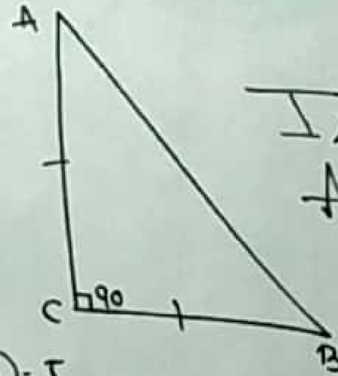
$7^2 + 24^2 = 49 + 576$

$= 625$

$25^2 = 7^2 + 24^2$ Yes

Hypotenuse $= 25$

④



Isosceles

$AC = BC$

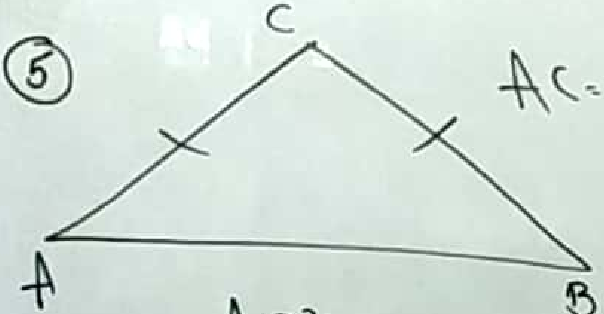
by P.T

$AB^2 = AC^2 + BC^2$

$AB^2 = AC^2 + AC^2$

$\boxed{AB^2 = 2AC^2}$

(5)



$AC = BC$

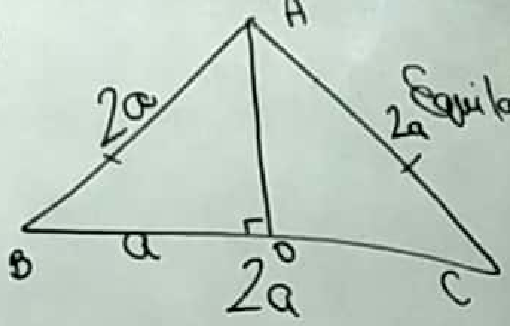
$AB^2 = 2AC^2$

$AB^2 = AC^2 + AC^2$

So $AB^2 = AC^2 + BC^2$

ΔABC Right angle Δ.

(6)



Equilateral Δ

$BD = \frac{BC}{2} = \frac{2a}{2} = a$

In ΔABD by P.T

$AB^2 = AD^2 + BD^2$

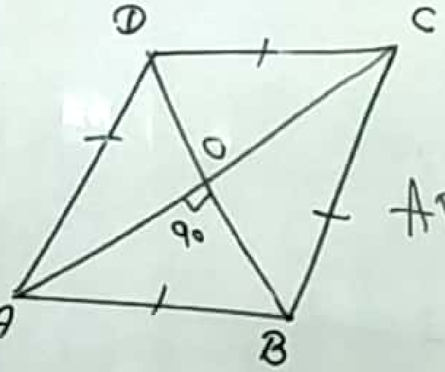
$(2a)^2 = AD^2 + a^2$

$4a^2 = AD^2 + a^2$

$3a^2 = AD^2$

$AD = \sqrt{3}\,a$

(7)



$AB = BC = CD = DA$

$$AB^2 + BC^2 + CD^2 + DA^2 = AC^2 + BD^2$$

Proof- diagonal of Rhombus bisect at 90°.

$$AO = \frac{1}{2} AC$$

$$BO = \frac{1}{2} BD$$

In ΔAOB by P.T

$$AB^2 = AO^2 + BO^2$$

$$AB^2 = \left(\frac{1}{2} AC\right)^2 + \left(\frac{1}{2} BD\right)^2$$

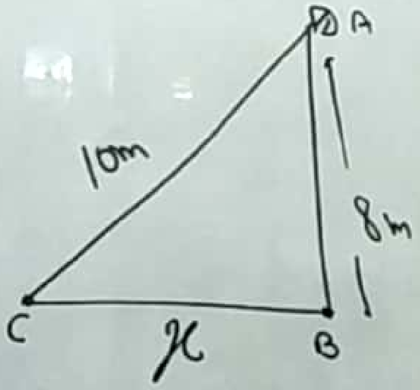
$$AB^2 = \frac{1}{4} AC^2 + \frac{1}{4} BD^2$$

So $4AB^2 = AC^2 + BD^2$

$$AB^2 + AB^2 + AB^2 + AB^2 = AC^2 + BD^2$$

$$\boxed{AB^2 + BC^2 + CD^2 + DA^2 = AC^2 + BD^2}$$

(9)



by P.T

$AC^2 = AB^2 + BC^2$

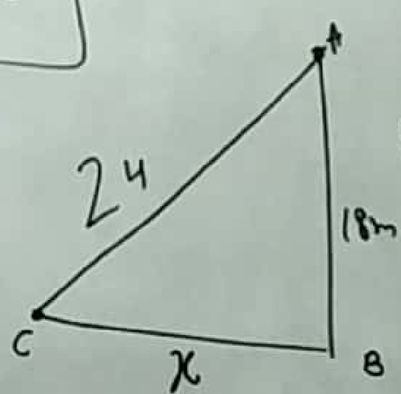
$10^2 = 8^2 + x^2$

$100 = 64 + x^2$

$36 = x^2$

$\boxed{x = 6}$

(10)



by P.T

$AC^2 = AB^2 + BC^2$

$24^2 = 18^2 + x^2$

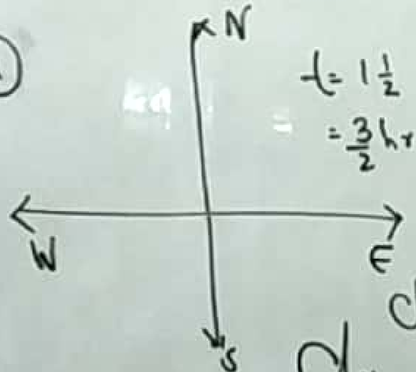
$576 - 324 = x^2$

$252 = x^2$

$x = \sqrt{252}$

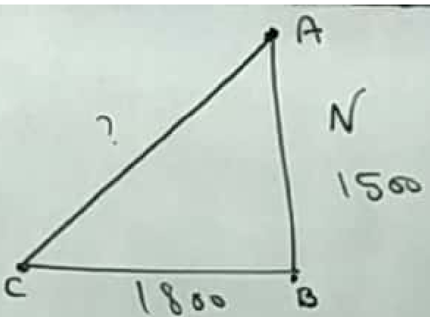
$x = \sqrt{}$

(11)



$t = 1\frac{1}{2}$

$= \frac{3}{2}\text{hr}$



$d = v \times t$

$d_N = \overset{500}{\cancel{1000}} \times \frac{3}{\cancel{2}} = 1500\text{km}$

$d_W = \overset{600}{\cancel{1200}} \times \frac{3}{\cancel{2}} = 1800\text{km}$

by P.T

$AC^2 = AB^2 + BC^2$

$AC^2 = 1500^2 + 1800^2$

$AC^2 = 2250000 + 3240000$

$AC = \sqrt{5490000}$

$= 100\sqrt{549}$

$= 100\sqrt{9 \times 61}$

$= 300\sqrt{61}$