Date:

4) $BC = \sqrt{\frac{4(3+\sqrt{5})}{3}}$ $3+\sqrt{5}>0$

So, $BC^2 = \frac{4(3+\sqrt{5})}{3}$

$BC^2 = \frac{12+4\sqrt{5}}{3}$.

$AB = \sqrt{\frac{5}{3}} + \frac{\sqrt{3}}{3}$

So, $AB^2 = \frac{5}{3} + 2\left(\sqrt{\frac{5}{3}}\right)\left(\frac{\sqrt{3}}{3}\right) + \frac{3}{9}$

$= \frac{6}{3} + \frac{2\sqrt{5}}{3}$

$AB^2 = \frac{6+2\sqrt{5}}{3}$.

$AC = \frac{\sqrt{15}+\sqrt{3}}{3}$

So, $AC^2 = \frac{15+2(\sqrt{15})(\sqrt{3})+3}{9}$

$= \frac{18+6\sqrt{5}}{9}$.

$AC^2 = \frac{6+2\sqrt{5}}{3}$

$AC^2 = AB^2$ and AB & AC are of same sign (+ve)

Then $AC = AB$.

hence $\triangle ABC$ is isoceles at A.

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

Thus, by converse of pythagorean theorem

$\triangle ABC$ is right isosceles at A. (b)

Exercise-2:

$AB = \sqrt{2.25} + \sqrt{\frac{64}{9}}$.

$= \sqrt{225 \times 10^{-2}} + \sqrt{\left(\frac{8}{3}\right)^2}$

$= \sqrt{5^2 \times 9^2 \times 10^{-2}} + \frac{8}{3}$

$= 5 \times 3 \times 10^{-1}$

$= \frac{3}{2} + \frac{8}{3} = \frac{9+16}{6} = \frac{25}{6}$ cm

Thus, AB is a rational no, (1) (since it is of the form $\frac{a}{b}$ where a is an integer & b is a non zero integer.)

P-2