Date:

2) a) $h = \sqrt{(2\sqrt{2}-4)^2} + \sqrt{(\sqrt{2}-1)^2} - \sqrt{(\sqrt{2}-2)^2}$.

To determine h we have to find the sign of

- $2\sqrt{2}-4 = \sqrt{8}-\sqrt{16} < 0$
- $\sqrt{2}-1 > 0$
- $\sqrt{2}-2 = \sqrt{2}-\sqrt{4} < 0$

then $h = 4 - 2\sqrt{2} - 1 + \sqrt{2} - (-\sqrt{2}+2)$

$= 3 - \sqrt{2} + \sqrt{2} - 2$

Thus, $h = 1$ cm which is an integer.

b) $\text{Area}_{ABCD} = \text{base} \times \text{height}$

$= BC \times AE$

$= \left(\frac{5\sqrt{6}}{6}\text{ cm}\right)(1\text{ cm})$

$$\boxed{A_{ABCD} = \frac{5\sqrt{6}}{6}\text{ cm}^2}$$

Exercise-3:

1) 1 is a root of $E(x)$

means $E(1) = 0$

$E(1) = (m+1)(1)^3 - 3(1)^2 - (m+3)(1) + 2m+1$

$= m+1-3-m-3+2m+1$

$0 = 2m-4$

Thus, $\boxed{m = 2}$

2) $E(x) = 2x^3 - 3x^2 - 4x + 5$

$E(\sqrt{2}) = 2\sqrt{2}^3 - 3(\sqrt{2})^2 - 4\sqrt{2} + 5$