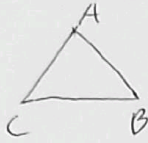


$$A = 61^\circ$$



$$\frac{2}{\frac{\sqrt{2}}{2}} = \frac{2\sqrt{2}}{\sin B} \rightarrow \sin B = \frac{\sqrt{2}}{2} \Rightarrow B = 45^\circ$$

$$C = 180^\circ - A - B = 74^\circ$$

1

$$\frac{AC}{\frac{\sqrt{2}}{2}} = \frac{2\sqrt{2}}{\frac{\sqrt{2}}{2}} \rightarrow AC = 2\sqrt{2}$$

$$\tan 61^\circ = \sqrt{2} = \frac{x}{2\sqrt{2}} \rightarrow x = 2$$

2

$$\frac{\sin C}{c} = \frac{\sin B}{b-2} \Rightarrow b-2 = b \rightarrow b = 2$$

3

$$1^2 = 2^2 + 2^2 - 2(2)(2)\cos B \rightarrow \cos B = 0.1$$

$$\sin^2 + \cos^2 = 1 \rightarrow 1 - 0.01 = \sin^2 B = 0.99$$

4

$$a^2 = (2(1+\sqrt{2}))^2 + 2^2 - 2(2(1+\sqrt{2}))(2)\left(\frac{1}{2}\right) \rightarrow a = \sqrt{24}$$

$$\frac{\sqrt{24}}{\frac{\sqrt{2}}{2}} = \frac{2}{\sin B} \rightarrow \sin B = \frac{\sqrt{2}}{2} \rightarrow B = 45^\circ$$

$$C = 180^\circ - A - B = 74^\circ$$

5

$$r^2 = r^2 + r^2 - 2(1)(r) \cos \alpha \rightarrow \cos \alpha = \frac{1}{r}$$

$$x^2 = e^2 + f^2 - 2(e)(f) \times \frac{1}{e} \rightarrow x = \sqrt{e^2 - 2f}$$

6

$$\text{اذا } x^2 = a^2 + d^2 - 2(a)(d) \times \frac{1}{r} \rightarrow x = \sqrt{a^2 + d^2 - \frac{2ad}{r}}$$

$$\therefore \frac{1}{r} (a)(d) \frac{\sqrt{r}}{r} = \delta = 1, \sqrt{r}$$

7

$$\frac{b^2 + c^2 + 2bc \cos A - a^2}{bc(\cos A + 1)} = \frac{b^2 + c^2 + 2bc - b^2 - c^2 + 2bc \cos A}{bc(\cos A + 1)} = \frac{2bc(\cos A + 1)}{bc(\cos A + 1)} = 2$$

8

$$a^2 + b^2 - c^2 = a^2 + a^2 b - a^2 c \rightarrow \frac{b^2 - c^2}{b - c} = a^2 \rightarrow \frac{(b - c)(b + c + bc)}{b - c} = a^2$$

$$b^2 + c^2 + bc = a^2$$

$$b^2 + c^2 + 2bc \cos \alpha = a^2 \Rightarrow 2 \cos \alpha = 1 \rightarrow \cos \alpha = \frac{1}{2}$$

9

$$r = \frac{1}{r} (1 - \cos \theta) (1 + r \cos \theta) \frac{1}{r} \rightarrow \cos \theta \left\{ \frac{1}{r} \right\}$$

$$a^2 = r^2 + v^2 - 2(r)(v) \frac{\sqrt{r}}{r} \rightarrow a^2 = d^2 - 1 \sqrt{r}$$

10