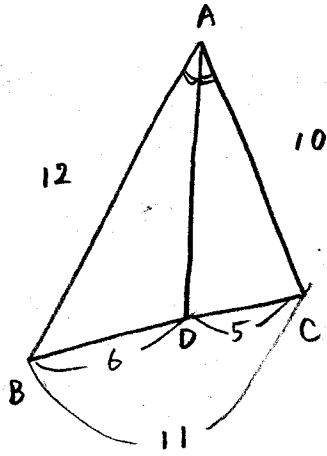




$$BD:DC = AB:AC = 12:10 = 6:5 \text{ ㄝㄣ}$$

$$BD = 11 \times \frac{6}{11} = 6$$

$$DC = 11 \times \frac{5}{11} = 5 \quad \text{ㄣㄣㄣ}$$

$$\text{ㄝㄣ} \cos B = \frac{12^2 + 6^2 - AD^2}{2 \times 12 \times 6} = \frac{12^2 + 11^2 - 10^2}{2 \times 12 \times 11} \quad \text{ㄣㄣㄣ}$$

$$\frac{144 + 36 - AD^2}{6} = \frac{144 + 121 - 100}{11} \quad \text{ㄝㄣ}$$

$$11(180 - AD^2) = 6 \times 165$$

$$180 - AD^2 = \frac{6 \times 165}{11}$$

$$AD^2 = \frac{180 \times 11 - 6 \times 165}{11}$$

$$= 180 - 6 \times 15$$

$$= 90$$

$$\text{ㄣㄣㄣ} AD = \sqrt{90} = \boxed{3\sqrt{10}} \quad \text{ㄣㄣㄣ}$$