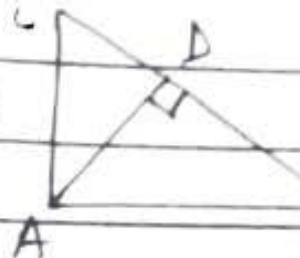


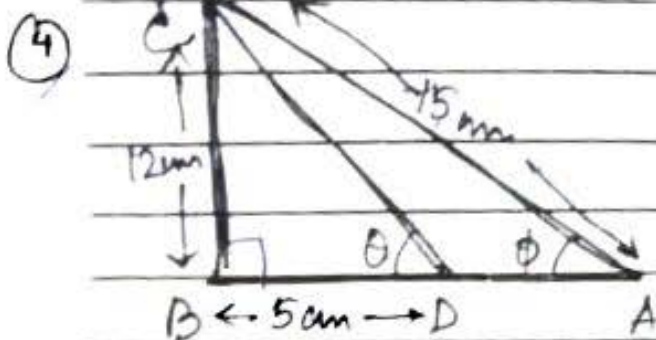
- ① In the adjoining figure $\angle BAC = 90^\circ$ and $AD \perp BC$.
Prove that $AD^2 = BD \cdot CD$.



② a) If $3x - \frac{1}{3x} = 9$ find $x^2 + \frac{1}{81x^2}$ $\frac{9^2}{9}$

b) If $\frac{a}{b} + \frac{b}{a} = -1$ find the value of $a^3 - b^3$ 0

- ③ On a certain sum of money, the difference between the CI for a year payable half-yearly and the SI for a year is Rs 180. Find the sum lent out, if the rate of interest in both the cases be 10%. $22,000$



From the given figure

find i) $4\cos\theta + 3\sec\phi$ $6\frac{2}{3}$

ii) $13\sin\theta - 4\csc\phi$ $7\frac{2}{3}$

⑤ If $\frac{\log(x+y)}{\log 3} = \frac{\log(x-y)}{\log 2} = \frac{\log 0.16}{\log 0.4}$ find x & y .

- ⑥ a) If θ be an acute \angle and $\tan(\theta + 15^\circ) = \sqrt{3}$, find the value of $\sin\theta$.

b) Show that $\log_8 \sqrt{8 \sqrt{8 \sqrt{8 \dots}}} = 1 = \log_8 8$

⑦ Value of a machine depreciates every year @ 10% p.a. The present value of a machine is Rs 72900. What was the value of the machine 2 years before and what will be the value after 2 years?

Parent's Signature

Class Teacher's Signature