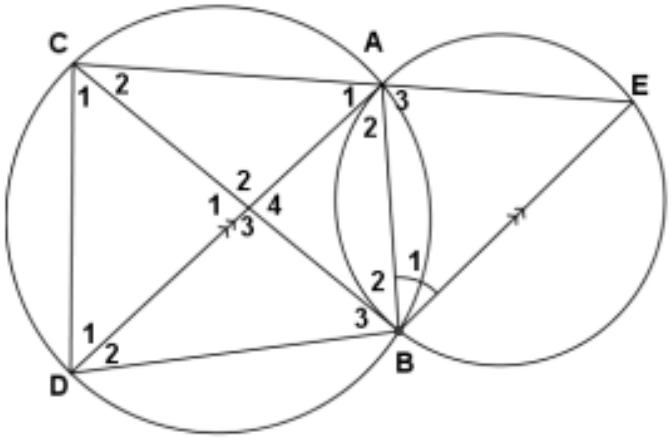
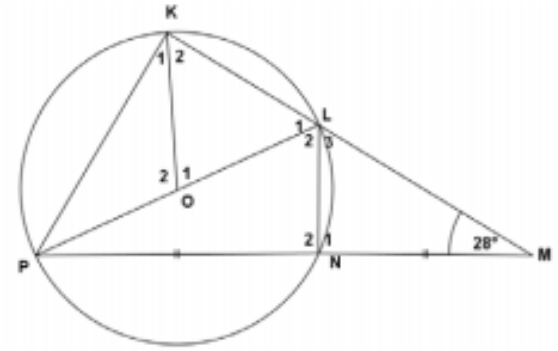
QUESTION 5

5.1	 $\hat{C}_2 = 40^0$ (tan *chord theorem*) $\hat{D}_2 = 40^0$ (tan *chord theorem*) $\hat{A}_2 = 40^0$ ($alt\angle s; AD//BE$) $\hat{A}_1 = \hat{A}_2 = 40^0$ (*given AD* bisects $C\hat{A}B$) $\hat{B}_3 = A_1 = 40^0$ ($\angle s$ *in same segment*) $\hat{C}_1 = \hat{A}_2 = 40^0$ ($\angle s$ *in same segment* $\hat{E} = \hat{A}_1 = 40$ ($corresp\angle s; AD//EB$	✓ angle ✓ reason ✓ angle ✓ reason ✓ angle ✓ reason ✓ angle ✓ reason ✓ angle ✓ reason ✓ angle ✓ reason ✓ angle ✓ reason (14)
5.2	$180^0 - (\hat{E} + B_1) = sum\ of\ \angle s\ of\ \Delta$ $\hat{A}_3 = 180^0 - (40^0 + 40^0)$ $= 180^0 - 80^0$ $= 100^0$	✓ *sum of* $\angle s$ *in* Δ is 180^0 ✓ answer (2)
		[16]

QUESTION 6

6.1	 *In* ΔLPN *and* ΔLMN 1) $PN = NM$ *given* 2) $N_2 = 90^0$ $\angle$ *In semi circle* $\hat{N}_1 = \hat{N}_2$ *adj.*supl *angles* $= 90^0$ 3) *LN is common* $\Rightarrow \Delta LPN = \Delta LMN$ *(SAS)* $\Rightarrow L\hat{P}N = 28^0$	✓given ✓ $\angle$*s in semi / circle* ✓ $\angle$*s on a str line* ✓common side ✓ *SAS* ✓ Answer (6)
6.2	$\hat{K}_1 + \hat{K}_2 = 90^0$ $K\hat{P}M = 180^0 - (90^0 + 28^0)$ *sum of* $\angle$*'s of* Δ $= 180^0 - 118^0$ $= 62^0$ $\Rightarrow K\hat{P}0 = 62^0 - 28^0$ $= 34^0$ $\Rightarrow K\hat{O}P = 180^0 - (34^0 + 34^0)$ *sum of* $\angle$*'s of* Δ $= 180^0 - 68^0$ $= 112^0$ *OR* $\hat{L}_1 = 28^0 + 28^0$ *ext.*$\angle$ *= sum of opp.*int.$\angle$ $K\hat{O}P = \hat{L}_1 + \hat{K}_2$ *ext.*$\angle$ *= sum of opp.*int.$\angle$ $K\hat{O}P = 56^0 + 56^0$ $= 112^0$	✓ $\angle$*s in semi / circle* ✓ *sum of* $\angle$*s in* Δ ✓ 34^0 ✓ *sum of* $\angle$*s in* Δ ✓answer ✓✓statement and reason ✓✓ statement and reason ✓answer (5)
		[11]

QUESTION 7

7.1.1	$OB = EB = x + 8$ *radii*	✓answer (1)
7.1.2	*In* ΔOBD $O\hat{D}B = 90^0$ line from centre to midpoint of the chord $OD^2 + DB^2 = OB^2$ Pythagoras theorem $x^2 + 12^2 = (x+8)^2$ $144 = 16x + 64$ $16x = 80 \Rightarrow x = 5$ $\therefore OB = 5 + 8 = 13cm$	✓90^0 ✓formula ✓subst. ✓answer (4)
7.2.1	$x = 180^0 - (68^0 + 68^0)$ $= 180^0 - 136^0$ $= 44^0$	✓✓ *sum of* $\angle s$ *of* Δ ✓Answer (3)
7.2.2	$\hat{B}_1 = 32^0$ tan *chord theorem* $y = 180^0 - (36^0 + 32^0)$ $= 180^0 - 68^0$ $= 112^0$	✓tan chord theorem ✓ *sum of* $\angle s$ *of* Δ ✓Answer (3)