BAREM DE NOTARE ȘI CORECTARE

Clasa a VIII-a

Partea I

1. a); **2.**d);**3.** c; **4.** -3)); **5.** a)

Partea a II-a

Problema 1

Aplicand T catetei: $AD^2 = DP \cdot DT\ si\ AT^2 = PT \cdot DT$................4p

$\frac{DP}{PT} = \frac{AD^2}{AT^2}$..2p

Analog$\frac{CQ}{QD} = \frac{AC^2}{AD^2}$..2p

$\frac{BT}{BC} \cdot \frac{CQ}{QD} \cdot \frac{DP}{PT} = \frac{BT}{BC} \cdot \frac{AC^2}{AD^2} \cdot \frac{AD^2}{AT^2} = \frac{BT \cdot AC^2}{BC \cdot AT^2}$...(1)..................................1p

$\Delta ABC \sim \Delta TAB, \frac{AC}{BT} = \frac{BC}{AB}$........(2)....................................2P

AT=TB........(3)..2P

$AC^2 = BC \cdot BT$..2p

$\frac{BT}{BC} \cdot \frac{CQ}{QD} \cdot \frac{DP}{PT} = \frac{BT \cdot BT \cdot BC}{BC \cdot BT^2}$..3p

Aplicand reciproca T. Menelaus in ΔDCT, pentru punctele B, P, Q, obtinem concluzia...2p

Problema 2

$\frac{2}{3}(x+y) + \frac{1}{3x\square} + \frac{3}{x+y} = \frac{x+y}{3} + \frac{3}{x+y} + \frac{x+y}{3} + \frac{1}{3x\square}$ 2p

$\frac{x+y}{3} + \frac{3}{x+y} \geq 2$..2p

Se arată că $\frac{x+y}{3} + \frac{3}{3x\square} \geq 1$, xy(x+y)+1≥ $3xy$...................2p

$x + y = s,\ xy = p.$ Inegalitatea devine: ps+1≥ $3p$.......2p

Este suficient sa dem. că $2p\sqrt{p} + 1 \geq 3p$....................2p

Notam $p = t^2\ cu\ t > 0$, Inegalitatea devine $2t^3 + 1 \geq 3t^2$........2p

$(t-1)(2t^2 - t - 1) \geq 0$ 3p

$(t-1)^2(2t+1) \geq 0$ relatie adevarata..............................3p

Finalizare 2p