

Barem de corectare

1) Scriem $\frac{x}{5} = \frac{y}{6}$ (1)

Scriem $\frac{y}{1} = \frac{z}{1}$ (2)

Inmulteste relatia (1) cu $\frac{1}{2}$ si deduce ca: $\frac{x}{10} = \frac{y}{12}$ (3)

Inmulteste relatia (2) cu $\frac{1}{12}$ si deduce ca: $\frac{y}{4} = \frac{z}{3}$ (4)

Inmulteste relatia (4) cu $\frac{1}{3}$ si deduce ca: $\frac{y}{12} = \frac{z}{9}$ (5)

Din (3) si (5) deduce ca $\frac{x}{10} = \frac{y}{12} = \frac{z}{9} = t$, de unde obtine ca: $x^2 = 100t^2$, $y^2 = 144t^2$, $z^2 = 81t^2$

Deci, $x^2 + y^2 = 244t^2$, care nu este patrat perfect, adica P_1 este falsa

$y^2 + z^2 = 225t^2 = (15t)^2$, prin urmare, P_2 este adevarata

2) $\sqrt{ab}=6$, $\sqrt{bc}=8$, $\sqrt{ac}=12$

Rezolvare $a=9$, $b=4$, $c=16$

3) $AD \parallel BC$

MB perpendiculara pe BC , rezulta MB perpendiculara pe AD

AC perpendiculara pe BD

$AC \cap BM = \{M\}$

4) a) Obtinem $MQ \equiv PN$

Obtinem $MQ \parallel NP$

Obtinem $MQPN$ paralelogram

b) Consideram problema rezolvata $\Rightarrow \hat{MQP} = 90^\circ$

Rezulta $MQ \perp QP$

$MQ \perp DC \Rightarrow Q \in DC$.

Obtinem $Q = D$

Obtinem $MD \perp AB$

Obtinem $BP \perp DC$