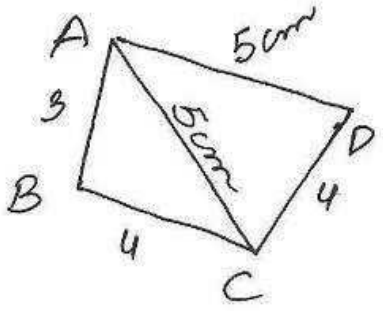
ex 12.2 herons formula 1x

(2)




$\Delta ABC$

$s = \frac{a+b+c}{2}$

$= \frac{3+4+5}{2}$

$= 6$ cm

area $= \sqrt{s(s-a)(s-b)(s-c)}$

$= \sqrt{6(6-3)(6-4)(6-5)}$

$= \sqrt{6\times3\times2\times1}$

$= \sqrt{2\times2\times3\times3}$

$= 2\times3$

$= 6\ cm^2$

$\Delta ADC$

$s = \frac{a+b+c}{2}$

$= \frac{4+5+5}{2}$

$= 7$cm

area $= \sqrt{s(s-a)(s-b)(s-c)}$

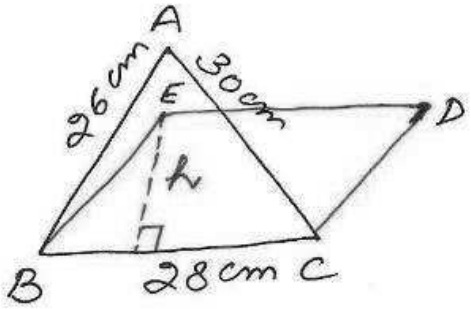
$= \sqrt{7(7-4)(7-5)(7-5)}$

$= \sqrt{7\times3\times2\times2}$

$= 2\sqrt{21}$ cm

ar($\square ABCD$) $= (6+2\sqrt{21})\ cm^2$

(4)




$\Delta ABC$

$s = \frac{a+b+c}{2}$

$= \frac{26+28+30}{2}$

$= \frac{84}{2}$

$= 42$ cm

area of $\Delta ABC$

$= \sqrt{s(s-a)(s-b)(s-c)}$

$= \sqrt{42(42-26)(42-28)(42-30)}$

$= \sqrt{42\times16\times14\times12}$

$= \sqrt{7\times3\times2\times4\times4\times2\times7\times2\times2\times3}$

$= 2\times2\times3\times4\times7$

$= 336\ cm^2$

area of llgm $= 336$

base $\times$ al. $= 336$

$28\times h = 336$

$\Rightarrow h = \frac{336}{28}$ 84 7

$\Rightarrow h = 12$

$\therefore$ height $= 12$cm