

Ex 4.2

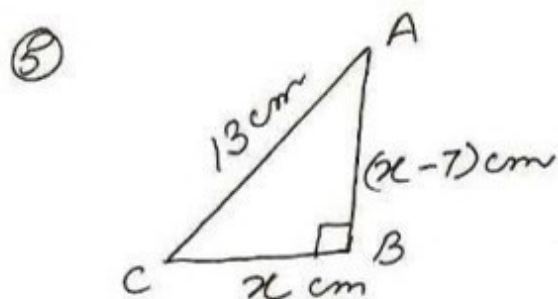
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2(11) $x^2 - 55x + 750 = 0$
 $\Rightarrow x^2 - 25x - 30x + 750 = 0$
 $\Rightarrow x(x-25) - 30(x-25) = 0$
 $\Rightarrow (x-25)(x-30) = 0$
 $\Rightarrow x-25=0, x-30=0$
 $\Rightarrow x=25, x=30$
 \therefore no. of toys = 25, 30

$\Rightarrow x(x+14) - 13(x+14) = 0$
 $\Rightarrow (x+14)(x-13) = 0$
 $\Rightarrow x+14=0, x-13=0$
 $\Rightarrow x=-14, x=13$
 rejected.

\therefore nos are 13, 14

③ let one no. = x
 second no. = $27-x$
 acc. to question
 $x(27-x) = 182$
 $\Rightarrow 27x - x^2 = 182$
 $\Rightarrow x^2 - 27x + 182 = 0$
 $\Rightarrow x^2 - 13x - 14x + 182 = 0$
 $\Rightarrow x(x-13) - 14(x-13) = 0$
 $\Rightarrow (x-13)(x-14) = 0$
 $\Rightarrow x-13=0, x-14=0$
 $\Rightarrow x=13, x=14$
 \therefore nos are 13, 14



In rt ΔABC
 $AC^2 = AB^2 + BC^2$ (pythagoras theorem)

$13^2 = (x-7)^2 + x^2$
 $\Rightarrow 169 = x^2 + 49 - 14x + x^2$
 $\Rightarrow 2x^2 - 14x - 120 = 0$
 $(\div 2)$
 $x^2 - 7x - 60 = 0$
 $\Rightarrow x^2 - 12x + 5x - 60 = 0$
 $\Rightarrow x(x-12) + 5(x-12) = 0$
 $\Rightarrow (x-12)(x+5) = 0$
 $\Rightarrow x-12=0, x+5=0$
 $\Rightarrow x=12, x=-5$
 rejected
 \therefore Sides are 12cm
 5cm

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