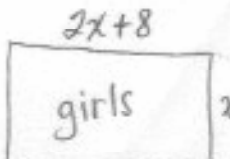
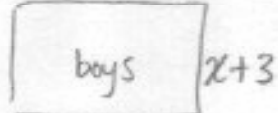


Show the main stages of your work

Rooms :



$2x+8$
girls
 x



$2x+8-7$
boys
 $x+3$
 $= 2x+1$

$A_{\text{girls}} = l \times w$
 $= (2x+8)x$
 $= \underline{2x^2+8x}$

$A_{\text{boys}} = (2x+1)(x+3)$
 $= 2x^2+6x+x+3$
 $= \underline{2x^2+7x+3}$

$$\begin{array}{r} 2x^2+8x = 2x^2+7x+3 \\ -2x^2 \quad -2x^2 \\ \hline 8x = 7x+3 \\ -7x \quad -7x \\ \hline x = 3 \end{array}$$


$\rightarrow A_g = 2(3)^2+8(3) = 42m^2$
 $\rightarrow A_b = 2(3)^2+7(3)+3 = 42m^2$

TOTAL AREA = $42+42 = 84m^2$

TOTAL COST OF FLOORING
 $= 84m^2 \cdot \$12/m^2$
 $= \underline{\underline{\$1008}}$

TOTAL COST (FLOOR + FURNISH.)
 $= \$1008 + \4000
 $= \underline{\underline{\$5008}}$

Court : square



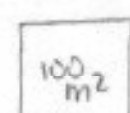
$A_{\text{court}} + 700m^2 = 1100m^2$
 $-700m^2 \quad -700m^2$
 $\hline A_{\text{court}} = 400m^2$

$\frac{\text{lawn}}{300m^2 \cdot 100 \frac{dm^2}{m^2} = 30000 dm^2}$

$\frac{30000 dm^2}{70 dm^2/\text{section}} \approx 428.6 \approx 430 \text{ sections}$

Cost
 $430 \text{ sections} \times \$10/\text{section}$
 $= \underline{\underline{\$4300}}$

Fencing



$\text{side} = \sqrt{100} = 10m$
 $\text{perim} = 4 \times 10m = 40m$

cost
 $40m \times \$30/m = \underline{\underline{\$1200}}$

TOTAL COST
 $\$4300 + \1200
 $= \underline{\underline{\$5500}}$

Salaries :

hair stylist salary = $x \rightarrow 400$
 camera operator salary = $2x \rightarrow 7 \cdot 2x = 14x = 5600$
 make-up artist salary = $x - 100 \rightarrow 300$

$$\begin{array}{r} x + 14x + x - 100 = 13x + 1100 \\ 16x - 100 = 13x + 1100 \\ -13x \quad -13x \end{array}$$

$$\begin{array}{r} 3x - 100 = 1100 \\ +100 = +100 \end{array}$$

$$\begin{array}{r} 3x = 1200 \\ \underline{3} \quad \underline{3} \end{array}$$

$$\boxed{x = 400}$$

DIRECTOR'S SALARY (x)

$$\begin{array}{r} 3x - 300 \leq 2x \\ +300 \quad +300 \end{array}$$

$$\begin{array}{r} 3x \leq 2x + 300 \\ -2x \quad -2x \\ \hline x \leq 300 \end{array}$$

\rightarrow for 5 shows/week \times 10 weeks = 50 shows

TOTAL SALARIES

$$400 + 5600 + 300 = \$6300 \text{ per week}$$

for 10 weeks

$$\$6300 \times 10 = \underline{\underline{\$63000}}$$

$$\begin{array}{l} \rightarrow \text{director's salary} \leq 50 \cdot 300 \\ \text{"} \leq 15000 \end{array}$$

TOTAL
 $63000 + 15000 = \underline{\underline{\$78000}}$

Food :

per week

food for girls = $x \rightarrow 32 \text{ kg}$
 food for boys = $3x + 4 \rightarrow 100 \text{ kg}$ } 132 kg

$$x(3x + 4) = 100x$$

$$\begin{array}{r} 3x^2 + 4x = 100x \\ -4x \quad -4x \end{array}$$

$$\begin{array}{r} 3x^2 = 96x \\ \underline{3} \quad \underline{3} \end{array}$$

$$\begin{array}{r} x^2 = 32x \\ \underline{x} \quad \underline{x} \end{array}$$

$$x = 32 \quad (x \neq 0)$$

cost per week
 $\Rightarrow 132 \text{ kg} \times 6 \text{ \$/kg} = \$792$

total cost for 10 weeks

$$\$792 \times 10 = \underline{\underline{\$7920}}$$

Budget Review :

Item	Cost	Comment
Rooms	\$5008	
Court	\$5500	
Salaries	\$78000	
Food	\$7920	
Total Cost	\$96428	

Recommendation :

10% for unexpected expenses

$$\rightarrow \begin{array}{cc} 110 & \$97000 \\ 100 & x \end{array}$$

$$x = \frac{100 \cdot 97000}{110} = \$88181.82$$

→ \$96428 does not leave room
for unexpected expenses.