1. Side = a

Perimeter = 3a = 180 cm

$\Rightarrow a = \frac{180}{3} = 60$

$s = \frac{180}{2} = 90$

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

$= \sqrt{90 \times (90-60)(90-60)(90-60)}$

$= \sqrt{90 \times 30 \times 30 \times 30}$

$= \sqrt{3 \times 30 \times 30 \times 30 \times 30}$

$= 30 \times 30\sqrt{3}$

$= 900\sqrt{3}\ cm^2$

2. Here a = 122m

b = 22m

c = 120m

$s = \frac{a+b+c}{2} = \frac{122+22+120}{2} = \frac{264}{2} = 132m$

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

$= \sqrt{132 \times (132-122) \times (132-22) \times (132-120)}$

$= \sqrt{132 \times 10 \times 110 \times 12}$

$= \sqrt{11 \times 12 \times 10 \times 11 \times 10 \times 12}$

* ~~$\sqrt{11 \times 10 \times 12} = 132$~~

$= 11 \times 10 \times 12 = 1320 m^2$

Rent for $1 m^2 = 5000$

Rent for $1320 m^2 = 5000 \times 1320$

Rent for 3 months $= \frac{5000 \times 1320}{4} = ₹ 1650000$

3. Here $a = 15m$

$b = 11m$

$c = 6m$

$s = \frac{a+b+c}{2} = \frac{15+11+6}{2} = \frac{32}{2} = 16$

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

$= \sqrt{16(16-15) \times (16-11) \times (16-6)}$

$= \sqrt{16 \times 1 \times 5 \times 10}$

$= \sqrt{4 \times 4 \times 5 \times 5 \times 2} = 4 \times 5\sqrt{2} = 20\sqrt{2} m^2$

4. Here $a = 18 cm$

$b = 10 cm$

$c = ?$

Perimeter $= 420 cm$

$c = 420 - (18+10)$

$= 42 - 28 = 14 cm$

$s = \frac{42}{2} = 21\text{ cm}$

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

$= \sqrt{21 \times (21-18) \times (21-10) \times (21-14)}$

$= \sqrt{21 \times 3 \times 11 \times 7}$

$= \sqrt{3 \times 7 \times 3 \times 11 \times 7} = 3 \times 7\sqrt{11}$

$= 21\sqrt{11}\text{ cm}^2$

5. Let sides be $12x, 17x, 25x$

Perimeter $= 12x + 17x + 25x = 54x$

Perimeter given $= 540\text{ cm} \Rightarrow 54x = 540$

$\Rightarrow x = \frac{540}{54} = 10$

Sides $= a = 12 \times 10 = 120\text{ cm}$

$b = 17 \times 10 = 170\text{ cm}$

$c = 25 \times 10 = 250\text{ cm}$

$s = \frac{120 + 170 + 250}{2} = \frac{540}{2} = 270\text{ cm}$

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

$= \sqrt{270 \times (270-120) \times (270-170) \times (270-250)}$

$= \sqrt{270 \times 150 \times 100 \times 20} = 9000\text{ cm}^2$

6. Here = $a = 12$ cm

$b = 12$ cm

$c = ?$

Perimeter = 30cm

$c = 30 - (12+12)$

$= 30 - 24 = 6$ cm

$s = \frac{30}{2} = 15$ cm

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

$= \sqrt{15 \times (15-12) \times (15-12) \times (15-6)}$

$= \sqrt{15 \times 3 \times 3 \times 9}$

$= \sqrt{3 \times 5 \times 3 \times 3 \times 3 \times 3}$

$= 9\sqrt{15}\ cm^2$