TRIANGLE

1) (i) 20°, 70° and 90°

The sum of three angles of a triangle is 180° therefore
Sum of 20° + 70° + 90° = 180
Since the sum is 180°. Hence it is possible.

(ii) Sum of 40°, 130° and 20°
40° + 130° + 20° = 190° not 180°. Therefore
Since the sum is not 180°. it is not possible.

(iii) Sum of 60°, 60° and 50°
60° + 60° + 50° = 170° not 180°
Since the sum is not 180°. Therefore it is not possible.

(iv) Sum of 125°, 40° and 15
= 125° + 40° + 15 = 180°
Since the sum is 180°. Hence it is possible.

2) Since the three angles of a triangle are equal and their sum is 180° therefore each angle will be $\frac{180°}{3} = 60°$

3) Since the sum of angles of a triangle is 180°

$\therefore \angle A + \angle B + \angle C = 180°$

$\Rightarrow 45° + 75° + \angle C = 180°$

$\Rightarrow 120° + \angle C = 180°$

$\Rightarrow \angle C = 180° - 120° = 60°$

4) Let $\angle Q = \angle R = x$, $\angle P = 60°$

But $\angle P + \angle Q + \angle R = 180°$

$\therefore 60° + x + x = 180$

$\Rightarrow 60° + 2x = 180°$

$\Rightarrow 2x = 180° - 60° = 120°$

$\Rightarrow x = \frac{120°}{2} = 60°$

$\therefore \angle Q = \angle R = 60°$

Hence $\angle R = 60°$