

A new cruise ship line has just launched 3 new ships: the Pacific Paradise, The Caribbean Paradise, and the Mediterranean Paradise. The Caribbean Paradise has 15 more deluxe staterooms than the Pacific Paradise. The Mediterranean Paradise has 37 fewer deluxe staterooms than twice the number of deluxe staterooms on the Pacific Paradise. Find the number of deluxe staterooms for each of the ships if the total number of deluxe staterooms for the three ships is 546

Solution:

Suppose that Pacific Paradise has  $x$  deluxe staterooms. Then Caribbean Paradise has  $(x + 15)$  deluxe staterooms and Mediterranean Paradise has  $(2x - 37)$  ones. Thus we have next equation

$$x + (x + 15) + (2x - 37) = 546,$$

$$4x - 22 = 546,$$

$$4x = 568,$$

$$x = \frac{568}{4} = 142 \text{ (deluxe staterooms)}$$

So

- 1) Pacific Paradise has 142 deluxe staterooms
- 2) Caribbean Paradise has  $(x + 15) = (142 + 15) = 157$  deluxe staterooms
- 3) Mediterranean Paradise has  $(2x - 37) = (2 \cdot 142 - 37) = 247$  deluxe staterooms

Answer:

- 1) Pacific Paradise has 142 deluxe staterooms
- 2) Caribbean Paradise has 157 deluxe staterooms
- 3) Mediterranean Paradise has 247 deluxe staterooms