Real Numbers Ex 1.2 Q16

Answer :

We are given that 15 pastries and 12 biscuit packets have been donated for a school fete. These are to be packed in several smaller identical boxes with the same number of pastries and biscuit packets in each. We need to find the number of biscuit packets and number of pastries each box contain.

Given that

Number of pastries = 15

Number of biscuits packets = 12.

Therefore, required number of boxes to contain equal number = H.C.F. of 15 and 12.

By applying Euclid's division lemma

$15 = 12 \times 1 + 3$

$12 = 3 \times 4 + 0.$

Therefore, number of boxes required = 3.

Hence each box will contain $\boxed{5}$ pastries and $\boxed{4}$ biscuits packets.

Real Numbers Ex 1.2 Q17

Answer :

A mason has to fit a bathroom with square marble tiles of the largest possible size. The size of the bathroom is 10ft. by 8ft. We need to find the size in inches of the tile required that has to be cut and number of such tiles are required.

Size of bathroom = 10ft by 8ft

$= (10 \times 12)$ inch. by (8×12) inch

$= 120$ inch. by 96 inch.

The largest size of tile required = H.C.F. of 120 and 96.

By applying Euclid's division lemma

$120 = 96 \times 1 + 24$

$96 = 24 \times 4 + 0.$

Therefore, H.C.F. = 24.

Thus, largest size of tile required = 24 inches.

Therefore,

$$\text{No. of tiles required} = \frac{\text{Area of bathroom}}{\text{Area of 1 tile}}$$

$$= \frac{120 \times 96}{24 \times 24}$$

$$= 5 \times 4$$

$$= \boxed{20 \text{ tiles}}.$$

Real Numbers Ex 1.2 Q18

Answer :

We are given that two brands of chocolates are available in packs of 24 and 15 respectively. If he needs to buy an equal number of chocolates of both kinds, then find least number of boxes of each kind he would need to buy.

Given that

Number of chocolates of 1st brand in one pack = 24

Number of chocolates of 2nd brand in one pack = 15.

Therefore, the least number of chocolates he need to purchase is

L.C.M. of 24 and 15 $= 2 \times 2 \times 2 \times 3 \times 5$

$\qquad\qquad = 120$

$$\begin{array}{r|l} 2 & 24,15 \\ \hline 2 & 12,15 \\ \hline 2 & 6,15 \\ \hline 3 & 3,15 \\ \hline & 1,5 \end{array}$$

Therefore, the number of packet of 1st brand is

$\dfrac{120}{24} = \boxed{5}$

And the number of packet of 2nd brand is

$\dfrac{120}{15} = \boxed{8}.$

Real Numbers Ex 1.2 Q19

Answer:

Given that 144 cartons of coke cans and 90 cartons of Pepsi cans are to be stacked in a canteen. If each stack is of the same height and contains cartons of the same drink We need to find the greatest number of cartons, each stack would have

Given that

Number of cartons of coke cans = 144

Number of cartons of Pepsi cans = 90.

Therefore, the greatest number of cartons in one stack = H.C.F. of 144 and 90.

By applying Euclid's division lemma

$144 = 90 \times 1 + 54$

$90 = 54 \times 1 + 36$

$54 = 36 \times 1 + 18$

$36 = 18 \times 2 + 0$

$H.C.F. = 18.$

Hence, the greatest number cartons in one stack $\boxed{18}$

Real Numbers Ex 1.2 Q20

Answer:

We are given that during a sale, color pencils were being sold in packs of 24 each and crayons in packs of 32 each. If we want full packs of both and the same number of pencils and crayons, we need to find the number of each we need to buy.

Given that

Number of color pencils in one pack = 24

Number of crayons in pack = 32.

Therefore, the least number of both colors to be purchased

$$L.C.M \text{ of } 24 \text{ and } 32 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$$

$$= 96$$

2	24,32
2	12,16
2	6,8
2	3,4
2	3,2
	3,1

Hence, number of packs of pencils to bought

$\dfrac{96}{24} = \boxed{4}$.

And number of packs of crayon to be bought

$\dfrac{96}{32} = \boxed{3}$.

Real Numbers Ex 1.2 Q21

Answer:

The merchant has 3 different oils of 120 liters, 180 liters and 240 liters respectively.

So the greatest capacity of the tin for filling three different types of oil is given by the H.C.F. of 120,180 and 240.

So first we will calculate H.C.F of 120 and 180 by Euclid's division lemma.

$180 = (120)(1) + 60$

$120 = (60)(2) + 0$

The divisor at the last step is 60. So the H.C.F of 120 and 180 is 60.

Now we will find the H.C.F. of 60 and 240,

$240 = (60)(4) + 0$

The divisor at the last step is 60. So the H.C.F of 240 and 60 is 60.

Therefore, the tin should be of $\boxed{60 \text{ litre}}$

*********** END *********