Review 8

1 Write each ratio in its simplest form.

(a) $5 : 25$ = $\boxed{1}$: $\boxed{5}$

(b) $24 : 18$ = $\boxed{4}$: $\boxed{3}$

(c) $56 : 72$ = $\boxed{7}$: $\boxed{9}$

(d) $125 : 100$ = $\boxed{5}$: $\boxed{4}$

(e) $123 : 369$ = $\boxed{1}$: $\boxed{3}$

(f) $310 : 186$ = $\boxed{5}$: $\boxed{3}$

2 A plank of wood is cut into two parts such that the ratio of the length of the shorter part to that of the longer part is $4 : 5$.

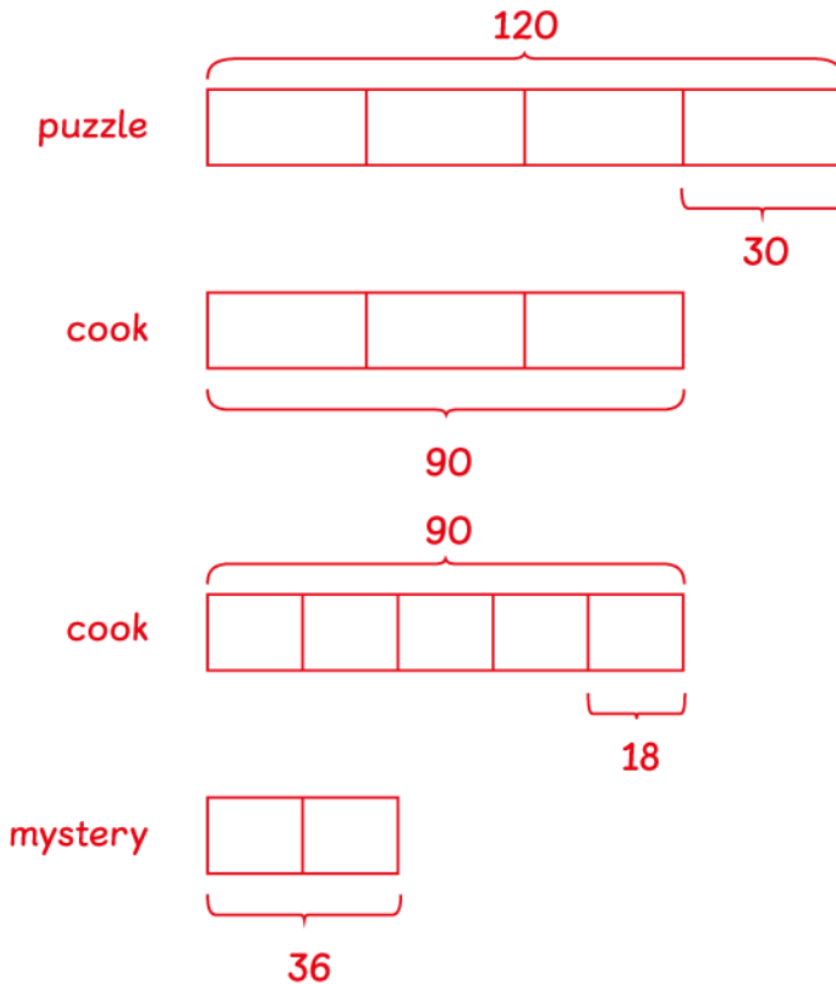(a) If the original length of the plank of wood is 81 cm, what is the length of the longer part?

$\boxed{45 \text{ cm}}$

(b) If the length of the longer part is 100 cm, what is the length of the shorter part?

$\boxed{80 \text{ cm}}$

(c) If the length of the shorter part is 84 cm, what is the original length of the plank of wood?
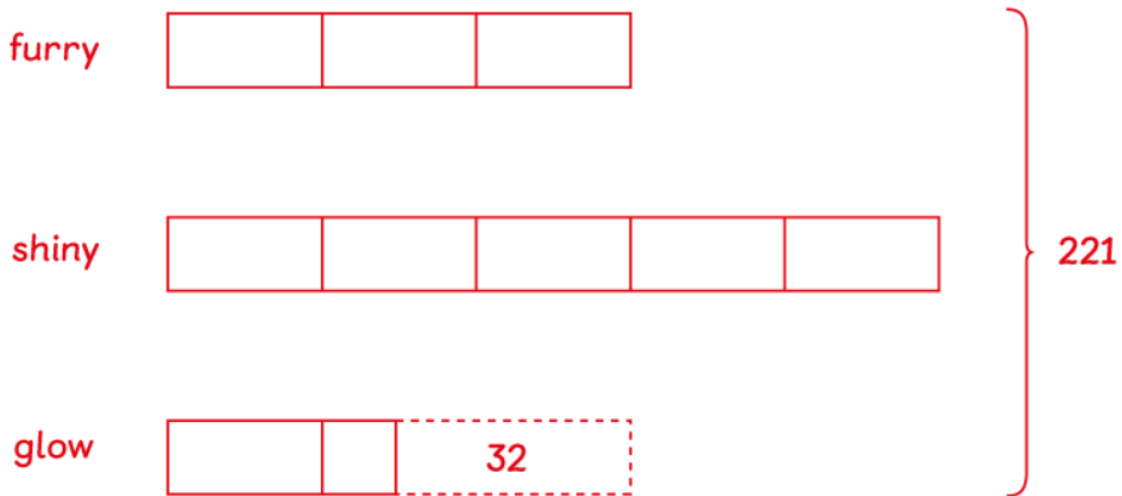
$\boxed{189 \text{ cm}}$

3 In a section of a library, there are cookbooks, mystery books and puzzle books. The ratio of the number of cookbooks to the number of mystery books is 5 : 2. The ratio of the number of puzzle books to the number of cookbooks is 4 : 3. There are 120 puzzle books. Find the total number of books.

120

puzzle

30

cook

90

90

cook

18

mystery

36

Total = 120 + 90 + 36 = 246 books.

4 Emma buys a pack of stickers that contains furry stickers, shiny stickers and glow-in-the-dark stickers. The ratio of the number of furry stickers to the number of shiny stickers is 3 : 5. There are 32 fewer glow-in-the-dark stickers than furry stickers. There are 221 stickers altogether. Find the number of glow-in-the-dark stickers in the pack.

furry

shiny   221

glow   32

(221 + 32) ÷ 11 = 23

23 x 3 - 32 = 37

Theree are 37 glow-in-the-dark stickers.

5 The ratio of the number of boys to the number of girls in a hall is 6 : 5.
When 20 girls leave the hall and 20 boys enter the hall, the ratio becomes
2 : 1. How many children were there in the hall at first?

boys | 18 units
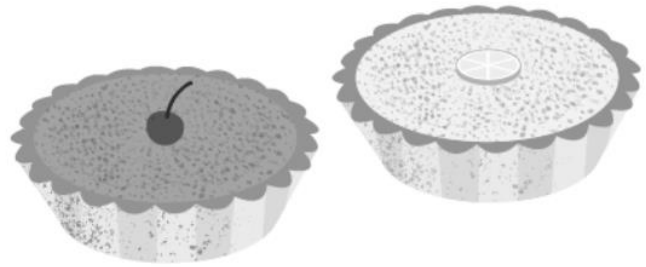
girls | 15 units

boys | 22 units

girls | 11 units

20

$20 \div 4 \times 33 = 165$

There were 165 children in the hall at first.

In a shop, a lemon pie costs £3 while a cherry pie costs £7. The ratio of the number of lemon pies to the number of cherry pies sold in a day was 3 : 7. A total of £1160 was collected from the sale of both kinds of pie. How many lemon pies and how many cherry pies were sold?

Ratio of total cost = 9 : 49 (number sold x price).

1160 ÷ 58 = 20

Total cost of pies:
   Lemon = 20 x 9 = £180
   Cherry = 20 x 49 = £980

Number of pies sold:
   Lemon = 180 ÷ 3 = 60
   Cherry = 980 ÷ 7 = 140

60 lemon pies and 140 cherry pies were sold.