



Ratio (1): Ratio and Fraction

Do these sums. Show all your working clearly.

- (1) There are 32 local stamps and 48 Malaysian stamps in a stamp album.
- (a) Find the ratio of the number of local stamps to the number of Malaysian stamps.
- (b) Find the ratio of the number of Malaysian stamps to the number of local stamps.
- (2) There are 350 pages in book A, 500 pages in book B and 200 pages in book C.
- (a) What is the ratio of the number of pages in book A to the number of pages in book B to the number of pages in book C?
- (b) What is the ratio of the number of pages in book B to the total number of pages in books A, B and C?

(3) The income of Mr Zhen and Mr Huang are in the ratio 4 : 5.

Mr Zhen

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Mr Huang

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(a) What fraction of Mr Huang's income is Mr Zhen's income?

Mr Zhen's income is

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 of Mr Huang's income.

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(b) What fraction of the total income of Mr Zhen and Mr Huang is Mr Huang's income?

Mr Huang's income is

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 of the total income of Mr Zhen and Mr Huang.

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(4) The ratio of the number of bees to the number of butterflies in a picture is 7 : 3.

bees

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butterflies

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(a) Express the number of bees as a fraction of the number of butterflies.

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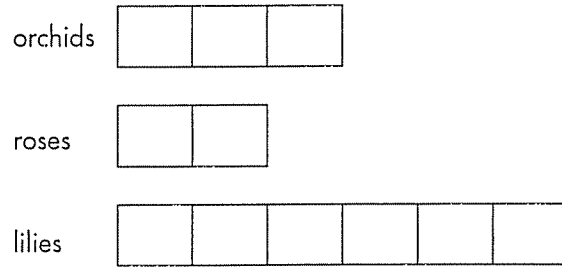
(b) Express the number of butterflies as a fraction of the number of bees.

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(c) Express the number of bees as a fraction of the total number of bees and butterflies.

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- (5) The ratio of the number of orchids to the number of roses to the number of lilies is 3 : 2 : 6.

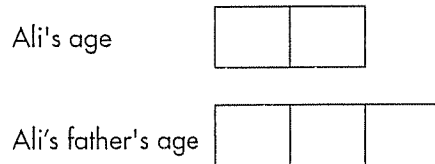


- (a) What is the ratio of the total number of orchids and roses to the number of lilies?

- (b) How many times as many lilies as roses are there?

- (c) Express the number of orchids as a fraction of the number of lilies.

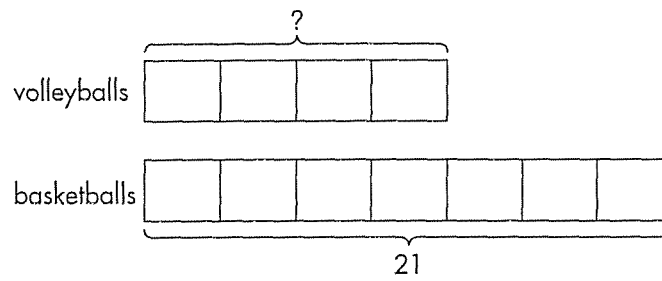
- (6) Ali's age is $\frac{2}{3}$ of his father's age.



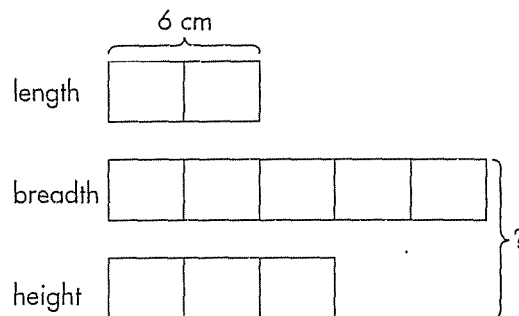
- (a) What is the ratio of Ali's age to his father's age?

- (b) Express Ali's father's age as a fraction of Ali's age.

- (7) The ratio of the number of volleyballs to the number of basketballs in the P.E. room is $4 : 7$. There are 21 basketballs. How many volleyballs are there?



- (8) The length, breadth and height of a box are in the ratio $2 : 5 : 3$. The length of the box is 6 cm. Find the sum of the breadth and the height of the box.

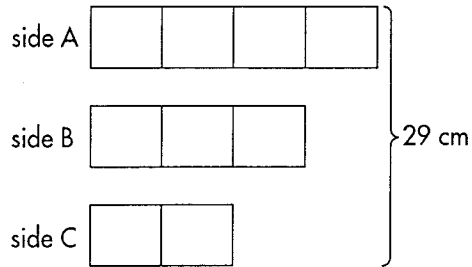


ANSWERS

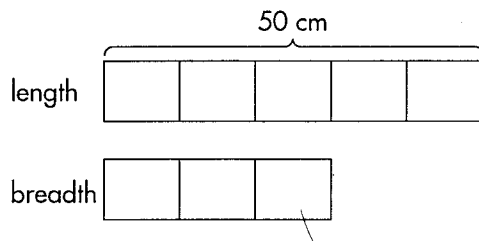
Exercise 5

- (1) (a) 2 : 3 (b) 3 : 2
(2) (a) 7 : 10 : 4 (b) 10 : 21
(3) (a) $\frac{4}{5}$ (b) $\frac{5}{9}$
(4) (a) $\frac{7}{3}$ (b) $\frac{3}{7}$ (c) $\frac{7}{10}$
(5) (a) 5 : 6 (b) 3 (c) $\frac{1}{2}$
(6) (a) 2 : 3 (b) $\frac{3}{2}$
(7) 12 (8) 24 cm (9) 27, 18, 45
(10) (a) 4 : 5 (b) 125
(11) $14\frac{1}{2}$ kg (12) 900 m²

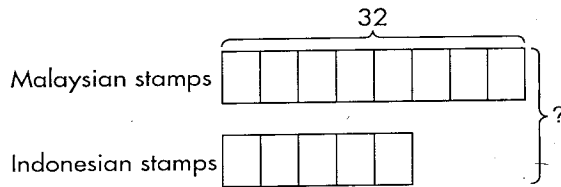
- (3) The sides of a triangle are in the ratio 4 : 3 : 2. If the perimeter is 29 cm, find the lengths of its sides.



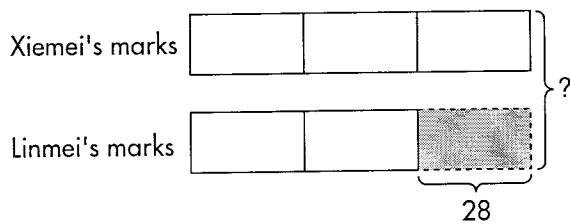
- (4) The ratio of the length of a rectangular piece of paper to its breadth is 5 : 3. Find the perimeter of the piece of paper if its length is 50 cm.



- (5) In my stamp album, there are 8 Malaysian stamps to every 5 Indonesian stamps. If there are 32 Malaysian stamps, find the total number of stamps in my stamp album.



- (6) The ratio of Xiemei's test marks to Linmei's test marks is 3 : 2. If Linmei's score is lower than Xiemei's by 28 marks, what is their total score?



ANSWERS

Exercise 6

(1) 30

(2) 50 g

(3) $12\frac{8}{9}$ cm, $9\frac{2}{3}$ cm, $6\frac{4}{9}$ cm

(4) 160 cm

(5) 52

(6) 140



Ratio (3): Changing Ratios

[09-09-27C-K6]

Do these sums. Show all your working carefully.

- (1) The ratio of the number of Shuzhen's books to Limei's is 3 : 4. Limei has 60 books. If Limei gives 30 books to Shuzhen, what will the new ratio of the number of Shuzhen's books to Limei's be?
- (2) Ahmad and Devi had an equal amount of money each. After Ahmad earned \$15 more and Devi earned \$10 more, the ratio of Ahmad's money to Devi's money became 8 : 7. How much money did each boy have at first?

(3) In a 'use-your-hands' campaign, $\frac{1}{5}$ of a class originally had to clean the tables and chairs. However, 2 more students in the class were added to the job later, causing the ratio of the number of participating students to that of non-participating students in the class to be 1 : 3. How many students were there in the class?

(4) The ratio of the number of sweets in Tin A to that in Tin B was 8 : 5. After $\frac{1}{4}$ of the sweets in Tin A were sold, there were 120 more sweets in Tin A than Tin B. How many sweets were there in Tin B?

(5) Some workers are digging a drain. The ratio of the length that has already been dug to that which has not been dug is 3 : 4. After another 20 m of the drain has been dug, this ratio becomes 4 : 3. What is the total length of the drain to be dug?

(6) The ratio of the number of people in Team A to that in Team B is 7 : 3. If 30 people from Team A join Team B, the ratio of the number of people in Team A to that in Team B will become 3 : 2. How many people are there in each team?

ANSWERS

Exercise 7

- (1) 5 : 2 (2) \$25 (3) 40 (4) 600
(5) 140 m (6) Team A: 210, Team B: 90