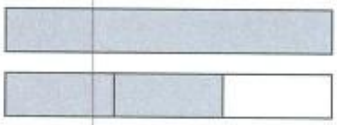
CHAPTER 4: FRACTIONS

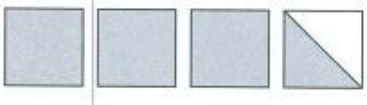
Level 1

Exercise 1

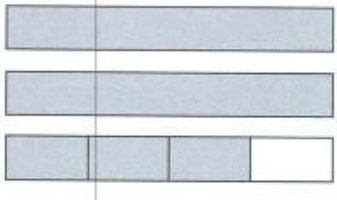
1. Write down the mixed number that the shaded parts in each diagram represent.

(a) 

1 whole 2 thirds = _____

(b) 

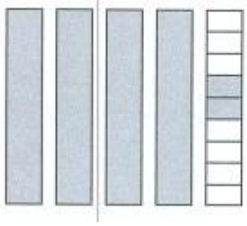
3 wholes 1 half = _____

(c) 

$2 + \frac{3}{4}$ = _____

(d) 

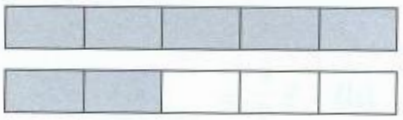
$2 + \frac{5}{6}$ = _____

(e) 

$4 + \frac{2}{9}$ = _____

2. Write down the improper fraction that the shaded parts in each diagram represent.

(a)

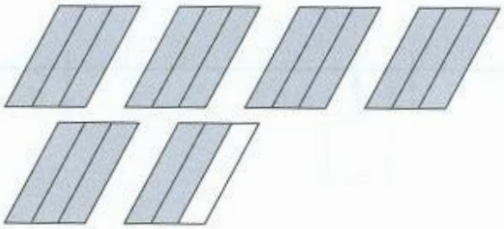


7 fifths = _____

(b)

11 quarters = _____

(c)

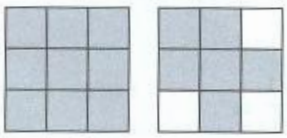


17 thirds = _____

(d)

24 eighths = _____

(e)



15 ninths = _____

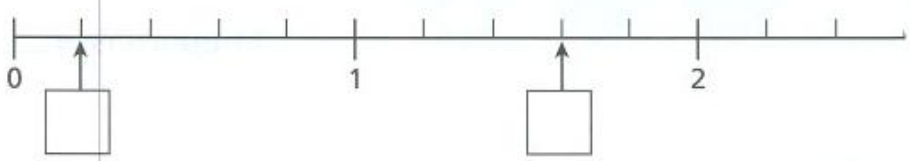
3. Express the mixed number in its simplest form.

(a) $1\frac{5}{10}$ = _____ (b) $2\frac{2}{6}$ = _____

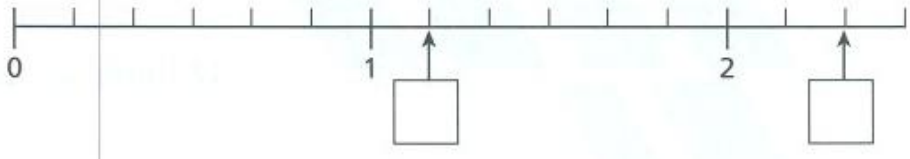
(c) $3\frac{9}{12}$ = _____ (d) $5\frac{6}{9}$ = _____

4. Fill in each box on the number line with a mixed number c whole number.

(a)



(b)



(c)

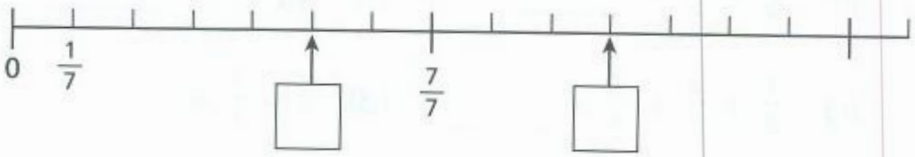
5. Express the improper fraction in its simplest form.

(a) $\frac{10}{4}$ = _____ (b) $\frac{8}{6}$ = _____

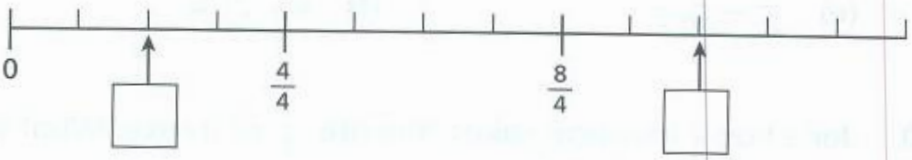
(c) $\frac{15}{8}$ = _____ (d) $\frac{21}{9}$ = _____

6. Fill in each box on the number line with an improper fraction in its simplest form.

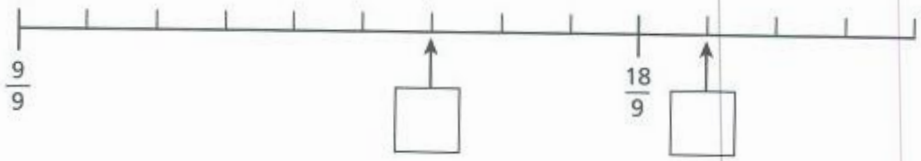
(a)



(b)



(c)



7. Change each improper fraction to a whole number or a mixed number in its simplest form.

(a) $\frac{7}{2}$ = _____ (b) $\frac{13}{3}$ = _____

(c) $\frac{12}{5}$ = _____ (d) $\frac{18}{6}$ = _____

(e) $\frac{24}{9}$ = _____ (f) $\frac{10}{8}$ = _____

8. Change each mixed number to an improper fraction in its simplest form.

(a) $2\frac{1}{7}$ = _____ (b) $1\frac{3}{10}$ = _____

(c) $2\frac{2}{8}$ = _____ (d) $3\frac{4}{12}$ = _____

(e) $4\frac{5}{6}$ = _____ (f) $5\frac{6}{10}$ = _____

9. Calculate and express the answer in its simplest form.

(a) $\frac{5}{6} + \frac{2}{3} =$ _____

(b) $\frac{5}{10} + \frac{3}{5} =$ _____

(c) $\frac{1}{2} + \frac{3}{8} + \frac{7}{8} =$ _____

(d) $2 - \frac{3}{7} =$ _____

(e) $\frac{1}{2} - \frac{1}{10} =$ _____

(f) $4 - \frac{8}{12} =$ _____

10. Jane had 2 identical cakes. She ate $\frac{1}{3}$ of a cake. What fractio the cakes were left?

11. Mrs Tan has $\frac{5}{6}$ kg of sugar. Mrs Lee has $\frac{11}{12}$ kg of sugar. How much sugar do they have altogether?

12. Peter jogged 3 km. Nathan jogged $\frac{7}{10}$ km. Who jogged for a longer distance? How much longer?

13. Henry's bag has a mass of $\frac{8}{9}$ kg. He puts in $\frac{1}{3}$ kg of books. How heavy is the bag now?

14. In a race, Mr Tan jogged for $\frac{9}{10}$ km. Then, he swam for $\frac{4}{5}$ km. What was the total distance that he had travelled?

15. A baker had 2 bags of flour, each with a mass of 2 kg. He opened one of the bags and used $\frac{9}{10}$ kg of flour. How much flour did the baker have left?

Exercise 2

1. Use the model(unitary) method to find the value of the following

(a) $\frac{1}{8}$ of 24

(b) $\frac{3}{4}$ of 16

(c) $\frac{5}{7}$ of 14

(d) $\frac{4}{5}$ of 20

2. There are 10 fruits on a table. 3 of them are apples. The rest are oranges.
(a) What fraction of the fruits are apples?
(b) What fraction of the fruits are oranges?

3. A butcher has 1 kg of meat. He cuts off 100 g of it.
   (a) What fraction of the meat is cut off?
   (b) What fraction of the meat is left?

4. There were 20 passengers on a bus. 12 of them were children. What fraction of the passengers were adults?

5. 35 pupils took a Mathematics test. 5 of them failed. What fraction of the pupils passed the test?

6. A florist has 12 stalks of roses. 2 of them are pink. 3 of them are yellow. The rest are red.
   (a) What fraction of the roses are pink?
   (b) What fraction of the roses are yellow?
   (c) What fraction of the roses are red?

7. Patrick has 24 fish in his fish tank. 10 of them are goldfish. 11 of them are guppies. The rest are catfish. What fraction of the fish are catfish?

8. Shi En had $40. He spent $14 of the money on a book. He then used $10 to buy lunch. What fraction of the money did he have left?

9. A baker made 15 pies. He sold $\frac{2}{3}$ of it.
   (a) How many pies did he sell?
   (b) How many pies did he have left?

10. Shirley has a rope with a length of 1 m. She cuts off $\frac{1}{4}$ of it. What is the length of the rope she has left? Give your answer in cm.

11. There are 28 pupils in a class. $\frac{6}{7}$ of them are girls. How many boys are there?

Level 2

Exercise 1

1. How many thirds are there in $4\frac{1}{3}$?

2. How many sevenths are there in 6 wholes?

3. How many quarters are there in $2\frac{1}{2}$?

4. Jie Yi spent $\frac{3}{4}$ of her money on a book. The book cost $12. How much money did she have at first?

5. Nicole used $\frac{1}{6}$ of her money on her lunch. She had $10 left. How much money did she have at first?

6. $\frac{3}{5}$ of the fruits in a basket are pears. There are 15 pears. How many fruits are there in the basket?

7. There are 21 dogs in a pet shop. $\frac{7}{9}$ of the animals in the pet shop are dogs. How many animals are there in the pet shop?

8. Mr Yee bought some guppies. $\frac{3}{7}$ of them were female. There were 12 male guppies. How many guppies did he buy?

9. $\frac{2}{9}$ of the pupils in a class failed their Maths test. 28 of them passed. How many pupils failed the Maths test?

10. There are 30 cars in a car park. $\frac{3}{8}$ of the vehicles in the car park are not cars. How many vehicles are there in the car park?

Exercise 2

Choose the correct answer and write its number in the brackets provided.

1. Express $\frac{24}{7}$ as a mixed number.

   (1) $7\frac{2}{3}$ (2) $3\frac{2}{7}$

   (3) $2\frac{4}{7}$ (4) $3\frac{3}{7}$ ( )

2. What is $4\frac{3}{8}$ as an improper fraction?

   (1) $\frac{96}{8}$ (2) $\frac{35}{8}$

   (3) $\frac{28}{8}$ (4) $\frac{20}{8}$ ( )

3. How many tenths are there in $2\frac{3}{5}$?

   (1) 30 (2) 27

   (3) 26 (4) 11 ( )

4. $2 + \frac{2}{3}$ is the same as _____.

(1) $\frac{22}{3}$ (2) $\frac{4}{3}$

(3) $3 - \frac{1}{3}$ (4) $\frac{2}{3} + \frac{2}{3}$ ( )

5. There were 40 children at a party. 12 of them were boys. What fraction of the children were girls?

(1) $\frac{7}{10}$ (2) $\frac{4}{7}$

(3) $\frac{3}{7}$ (4) $\frac{3}{10}$ ( )

6. What is $\frac{5}{6}$ of 18?

(1) $\frac{15}{6}$ (2) $\frac{23}{6}$

(3) $\frac{90}{108}$ (4) 15 ( )

7. $\frac{7}{8}$ of a number is 56. What is the number?

(1) 3136 (2) 64

(3) 49 (4) 7 ( )

A class of pupils was asked to choose their favourite sport. The table below shows the result. Use the result to answer questions 8 to 10.

Sport	Number of pupils
Football	12
Table tennis	6
Basketball	8
Swimming	3
Badminton	7

8. What fraction of the pupils chose swimming?

(1) $\frac{1}{12}$ (2) $\frac{3}{12}$

(3) $\frac{3}{7}$ (4) $\frac{9}{10}$ ( )

9. What fraction of the pupils chose football or basketball?

(1) $\frac{1}{9}$ (2) $\frac{1}{3}$

(3) $\frac{2}{9}$ (4) $\frac{5}{9}$ ( )

10. Which sport was half as popular as table tennis?

(1) Table tennis (2) Basketball

(3) Swimming (4) Badminton ( )

11. In a basket, there are 9 apples, 3 oranges and 6 pears. What fraction of the fruits in the basket are apples and pears?

(1) $\frac{5}{6}$ (2) $\frac{2}{3}$

(3) $\frac{1}{2}$ (4) $\frac{1}{3}$ ( )

12. There are 45 vehicles in a car park. 4 out of every 5 vehicles are cars. The rest are buses. How many buses are there?

(1) 5 (2) 9

(3) 36 (4) 41 ( )

13. Yew Wing lost $\frac{2}{3}$ of his cards and had 12 cards left. How many cards did he have at first?

(1) 60 (2) 42

(3) 36 (4) 18 ( )

14. There are some fruits in a basket. $\frac{1}{4}$ of the fruits are apples. The rest are oranges. There are 6 more oranges than apples. How many fruits are there?

(1) 6 (2) 12
(3) 24 (4) 25 ( )

15. There are 36 pupils in a class. $\frac{2}{9}$ of the class are boys. How many more girls than boys are there in the class?

(1) 28 (2) 20
(3) 8 (4) 4 ( )

Exercise 1

1. In a classroom, the number of boys is $\frac{2}{3}$ of the number of girls. There are 21 girls. Find the number of boys.

2. In a bus, the number of children is $\frac{3}{5}$ of the number of adults. There are 15 children. Find the number of passengers on the bus.

3. The mass of an apple is $\frac{1}{2}$ of the mass of a mango. The total mass of the two fruits is 870 g. What is the mass of the mango?

4. The cost of a toy train was $\frac{3}{4}$ of the cost of a toy car. If the toy train cost $42, how much was the toy car?

5. Mei Ling is $\frac{7}{9}$ as tall as her father. Her father's height is 171 cm. Find Mei Ling's height.

6. Alonso is $\frac{2}{11}$ as old as his grandfather. Alonso is 12 years old. How old is his grandfather?

7. Carly had just got back her English and Maths test papers. Her English test marks was $\frac{7}{10}$ of her Maths test marks. She scored 63 marks for her English test. What was her score for the Maths test?

8. In a fruit farm, the number of durian trees is $\frac{1}{4}$ of the number of rambutan trees. There are 165 more rambutan trees than durian trees. How many rambutan trees are there?

9. There were 30 days last month. The number of hazy days was $\frac{3}{7}$ of the number of non-hazy days. How many more non-hazy days than hazy days were there last month?

10. In a farm, the number of cows is $\frac{3}{10}$ of the number of goats. There are 87 cows. How many more goats than cows are there?

11. There were 69 children at a concert. The number of children was $\frac{1}{12}$ of the number of adults. Find the total number of children and adults at the concert.

12. Natasha's brother has $14 more than her. She has $\frac{3}{5}$ as much money as her brother. How much money does Natasha have?

13. This year, Hannah is $\frac{1}{5}$ as old as her mother. Her mother is 45 years old. How old was Hannah last year?

14. Fiona's age is $\frac{2}{3}$ of her brother's age. Fiona is 6 years younger than her brother. How old will Fiona be next year?

15. Paul is $\frac{1}{7}$ as old as his grandfather. Paul is 8 years old this year. How old will his grandfather be when Paul is 12 years old?

Exercise 2

1. What is the missing number?

   $\frac{3}{4}$ of 16 $= 2 \times$ _____

2. What is the missing number?

   $\frac{5}{12}$ of 48 $= 10 \times$ _____

3. Arrange these fractions in order. Begin with the smallest.

$\frac{7}{6}$, $1\frac{1}{12}$, 1, $\frac{11}{6}$ _____

4. Arrange these fractions in order. Begin with the greatest.

$3\frac{3}{4}$, $\frac{33}{8}$, $\frac{17}{4}$, 4 _____

5. Look at the number sequence. Fill in the missing mixed number. (Hint: change all numbers to improper fractions.)

$\frac{1}{5}$, 1, $1\frac{4}{5}$, $2\frac{3}{5}$, _____

6. Look at the number sequence. Fill in the missing mixed number.

$\frac{11}{7}$, $2\frac{2}{7}$, 3, _____, $4\frac{3}{7}$

7. $\frac{2}{7}$ of a number is 32. What is $\frac{1}{8}$ of the number?

8. $\frac{3}{11}$ of a number is 27. What is $\frac{2}{9}$ of the number?

9. A water tank contains 27 *l* of water when it is $\frac{3}{10}$ full. How much water are there in the water tank when it is half full?

10. John has $28. He has $\frac{1}{4}$ as much money as Khairul. Timothy has twice as much money as Khairul. How much do the three of them have altogether?

11. In a party, there were 8 adults. There were 4 times as many girls as adults. There were also $\frac{3}{4}$ as many boys as girls. How many people were there at the party?

12. Rita is 7 years old. She is $\frac{1}{5}$ as old as her father. Her sister is twice as old as her. Find the difference between her father's age and her sister's age.

13. Jun Hao is $\frac{8}{9}$ as heavy as Alfian. Ryan is 3 times as heavy as Alfian. Jun Hao has a mass of 24 kg. Find Ryan's mass.

14. There are some red, blue and green marbles in a container. The number of green marbles is $\frac{1}{2}$ of the number of blue marbles. There are thrice as many red marbles as green marbles and 18 more red marbles than blue marbles. How many marbles are there in the container?

15. Mr Lim is 3 times as old as his son. His son is $\frac{3}{8}$ as old as his wife. His wife is 40 years old. How old will Mr Lim be next year?