## EXERCISE 7A

**1. Weight of 8 identical articles is 4.8 kg. What is the weight of 11 such articles?**
**Solution:**

It is given that
Weight of 8 identical articles = 4.8 kg
So the weight of 1 article = 4.8/8 kg
Here the weight of 11 such articles = 4.8/8 × 11
We get
= 0.6 × 11
= 6.6 kg

**2. 6 books weigh 1.260 kg. How many books will weigh 3.150 kg?**
**Solution:**

It is given that
Weight of 6 books = 1.260 kg or 1 kg 260 g
Number of books = 6
So the number of books in 1 kg = 6/ 1.260
Number of books in 3.150 kg = (6 × 3.150)/ 1.260
Multiplying 1000 to numerator and denominator
= (6 × 3150)/ 1260
= 3150/ 210
= 15 books

**3. 8 men complete a work in 6 hours. In how many hours will 12 men complete the same work?**
**Solution:**

It is given that
Time taken by 8 men to complete a work = 6 hours
So the time taken by 1 man to complete the work = 6 × 8 hours
Time taken by 12 men to complete the work = (6 × 8)/ 12 = 4 hours

**4. If a 25 cm long candle burns for 45 minutes, how long will another candle of the same material and same thickness but 5 cm longer than the previous one burn?**
**Solution:**

Time taken by a 25 cm long candle to burn = 45 minutes
Time taken by a 1 cm long candle to burn = 45/ 25 minutes
So the time taken by a 25 + 5 = 30 cm long candle to burn = (45 × 30)/ 25 = 54 minutes

**5. A typist takes 80 minutes to type 24 pages. How long will he take to type 87 pages?**
**Solution:**

Time taken by a typist to type 24 pages = 80 minutes
Time taken by a typist to type 1 page = 80/24 minutes
Time taken by a typist to type 87 pages = (80 × 87)/ 24 = 290 minutes

**6. ₹750 support a person for 15 days. For how many days will ₹ 2,500 support the same person?**

**Solution:**

It is given that
₹ 750 can support a family for 15 days
So ₹ 1 will support a family = 15/ 750 days
Similarly ₹ 2500 will support a family = 15/ 750 × 2500 = 50 days

**7. 400 men have provisions for 23 weeks. They are joined by 60 men. How long will the provisions last?**
**Solution:**

It is given that
No. of weeks 400 men have provisions = 23 weeks
No. of weeks 1 man have provisions = 23 × 400 weeks
So the no. of weeks 400 + 60 = 460 men have provisions = (23 × 400)/ 460 = 20 weeks

**8. 200 men have provisions for 30 days. If 50 men have left, for how many days the same provisions would last for the remaining men?**
**Solution:**

No. of days 200 men have provisions = 30 days
No. of days 1 man have provisions = 30 × 200 days
So the no. of days 200 – 50 = 150 men have provisions = (30 × 200)/ 150 = 40 days

**9. 8 men can finish a certain amount of provisions in 40 days. If 2 more men join them, find for how many days will the same amount of provisions be sufficient.**
**Solution:**

No. of days 8 men can finish a certain amount of provision = 40 days
No. of days 1 man can finish provision = 40 × 8 days
So the no. of days 8 + 2 = 10 men finish a provision = (40 × 8)/ 10 = 32 days

**10. If the interest on ₹ 200 be ₹ 25 in a certain time, what will be the interest on ₹ 750 for the same time?**
**Solution:**

It is given that
Interest on ₹ 200 = ₹ 25
Interest on ₹ 1 = ₹ 25/200
So the interest on ₹ 750 = (25 × 750)/ 200 = 750/8 = ₹ 93.75

**11. If 3 dozen eggs cost ₹ 90, find the cost of 3 scores of eggs. [1 score = 20]**
**Solution:**

We know that
3 dozen = 3 × 12 = 36 eggs
3 scores = 3 × 20 = 60
Cost of 36 eggs = ₹ 90
Cost of 1 egg = ₹ 90/36
Cost of 60 eggs = (90 × 60)/ 36 = ₹ 150

**12. If the fare for 48 km is ₹ 288, what will be the fare for 36 km?**

**Solution:**

It is given that
Fare for 48 km = ₹ 288
So the fare for 1 km = (288 × 36)/ 48 = ₹ 216

**13. What will be the cost of 3.20 kg of an item, if 3 kg of it costs ₹ 360?**
**Solution:**

It is given that
Cost of 3 kg of an item = ₹ 360
Cost of 1 kg of an item = ₹ 360/3
So the cost of 3.20 kg of an item = (360 × 3.20)/ 3 = ₹ 384

**14. If 9 lines of a print, in a column of a book, contain 36 words, how many words will a column of 51 lines contain?**
**Solution:**

No. of words in a 9 lines of a print = 36
No. of word in a 1 line of a print = 36/9
No. of words in 51 lines of a print = 36/9 × 51 = 204

**15. 125 students have food sufficient for 18 days. If 25 more students join them, how long will the food last now?**
**What assumption have you made to come to your answer?**
**Solution:**

No. of pupils in the beginning = 125
No. of pupils joined = 25
So the total no. of pupils = 125 + 25 = 150
No. of days food is sufficient for 125 pupils = 18 days
No. of days food is sufficient for 1 pupil = 18 × 125 days
No. of days food is sufficient for 150 pupils = (18 × 125)/ 150
We get
= (18 × 5)/ 6
= 15 days

## EXERCISE 7B

**1. The cost of 3/5 kg of ghee is ₹ 96, find the cost of:**
**(i) one kg ghee.**
**(ii) 5/8 kg ghee.**
**Solution:**

It is given that
Cost of 3/5 kg of ghee = ₹ 96

(i) Cost of 1 kg of ghee = 96 × 5/3 = ₹ 160

(ii) Cost of 5/8 kg of ghee = 160 × 5/8 = ₹ 100

**2. 3 ½ m of cloth costs ₹ 168, find the cost of 4 1/3 m of the same cloth.**
**Solution:**

It is given that
Cost of 3 ½ m of cloth = ₹ 168
So the cost of 1 m of cloth = 168 × 2/7 = ₹ 48
Similarly the cost of 4 1/3 m of cloth = 48 × 13/3 = ₹ 208

**3. A wrist-watch loses 10 sec in every 8 hours. In how much time will it lose 15 sec?**
**Solution:**

It is given that
Time taken by a wrist watch to lose 10 sec = 8 hours
So the time taken by a wrist watch to lose 1 sec = 8/10 hours
Similarly the time taken by a wrist watch to lose 15 sec = 8/10 × 15 = 12 hours

**4. In 2 days and 20 hours a watch gains 20 sec. Find, how much time the watch will take to gain 35 sec.**
**Solution:**

We know that
2 days 20 hours = 2 × 24 + 20 = 48 + 20 = 68 hours
Time in which 20 sec are gained = 68 hours
So the time in which 1 sec will be gained = 68/20 hours
Similarly the time in which 35 sec will be gained = 68/20 × 35
By further calculation
= 119 hours
So we get
= 119 ÷ 24 days
= 4 days 23 hours

**5. 50 men mow 32 hectares of land in 3 days. How many days will 15 men take to mow it?**
**Solution:**

Land is similar for both the case.
No. of days taken by 50 men to mow the land = 3 days
No. of days taken by 1 man to mow the land = 3 × 50 days

No. of days taken by 15 men to mow the land = (3 × 50)/ 15 = 10 days

**6. The wages of 10 workers for six days week are ₹ 1,200. What are the one day wages:**
**(i) of one worker?**
**(ii) of 4 workers?**
**Solution:**

It is given that
Wages of 10 workers for 6 days a week = ₹ 1200
Wages of 10 workers per day = 1200/6 = ₹ 200
Wages of 1 worker per day = 200/10 = ₹ 20
Wages of 4 workers per day = 4 × 20 = ₹ 80

**7. If 32 apples weigh 2 kg 800 g, how many apples will there be in a box, containing 35 kg of apples?**
**Solution:**

Weight of apples in a box = 35 kg
If the weight of apples is 2 kg 800 g (2.8 kg) then the number of apples = 32
No. of apples if the weight is 1 kg = 32/2.800
No. of apples if the weight is 35 kg = (32 × 35)/ 2.800
Multiplying both numerator and denominator by 1000
= (32 × 35 × 1000)/ 2800
= 400

**8. A truck uses 20 litres of diesel for 240 km. How many litres will be needed for 1200 km?**
**Solution:**

Diesel needed for 240 km = 20 litres
Diesel needed for 1 km = 20/ 240 litres
Diesel needed for 1200 km = 20/240 × 1200 = 100 litres

**9. A garrison of 1200 men has provisions for 15 days. How long will the provisions last if the garrison be increased by 600 men?**
**Solution:**

No. of days 1200 men has provisions = 15 days
No. of days 1 man has provisions = 15 × 1200 days
No. of days 1200 + 600 = 1800 men has provisions = (15 × 1200)/ 1800 = 10 days

**10. A camp has provisions for 60 pupils for 18 days. In how many days, the same provisions will finish off if the strength of the camp is increased to 72 pupils?**
**Solution:**

No. of days 60 pupil have provisions = 18 days
No. of days 1 pupil have provision = 18 × 60 days
No. of days 72 pupils have provision = (18 × 60)/ 72 = 15 days

## EXERCISE 7C

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**1. A can do a piece of work in 6 days and B can do it in 8 days. How long will they take to complete it together?**
**Solution:**

It is given that
A can do a piece of work in 6 days
So A's one day work = 1/6
B can do the same work in 8 days
So B's one day work = 1/8
Here A and B one day work = 1/6 + 1/8
By taking LCM
= (4 + 3)/ 24
= 7/24
Similarly A and B can do the same work = 24/7 = 3 3/7 days

**2. A and B working together can do a piece of work in 10 days. B alone can do the same work in 15 days. How long will A along take to do the same work?**
**Solution:**

It is given that
A and B work together to do a piece of work in 10 days
B alone can do the same work in 15 days
So we get
A and B one day work = 1/10
B's one day work = 1/15
A's one day work = 1/10 – 1/15
Taking LCM
= (3 – 2)/ 30
= 1/30
No. of days A can do the same work = 30 days

**3. A can do a piece of work in 4 days and B can do the same work in 5 days. Find, how much work can be done by them working together in:**
**(i) one day**
**(ii) 2 days.**
**What part of work will be left, after they have worked together for 2 days?**
**Solution:**

It is given that
A can do a piece of work in 4 days
B can do the same work in 5 days
A's one day work = ¼
B's one day work = 1/5

(i) A and B both one day work = ¼ + 1/5
Taking LCM
= (5 + 4)/ 20
= 9/ 20

(ii) A and B two days' work = 9/20 × 2 = 9/10

So the work left after 2 days = 1 – 9/10
Taking LCM
= (10 – 9)/ 10
= 1/10

**4. A and B take 6 hours and 9 hours respectively to complete a work. A works for 1 hour and then B works for two hours.**
**(i) How much work is done in these 3 hours?**
**(ii) How much work is still left?**
**Solution:**

It is given that
A takes 6 hours to finish the work
B takes 9 hours to finish the work
A's 1 hour work = 1/6
B's 1 hour work = 1/9
B's 2 hour work = 1/9 × 2 = 2/9

(i) A's 1 hour work + B's 2 hours' work = 1/6 + 2/9
By taking LCM
= (3 + 4)/ 18
= 7/18

(ii) The work still left = 1 – 7/18
Taking LCM
= (18 – 7)/ 18
= 11/18

**5. A, B and C can do a piece of work in 12, 15 and 20 days respectively. How long will they take to do it working together?**
**Solution:**

A can do a piece of work in 12 days
B can do a piece of work in 15 days
C can do a piece of work in 20 days
A's one day work = 1/12
B's one day work = 1/15
C's one day work = 1/20
So A, B and C's together one day work = 1/12 + 1/15 + 1/20
Taking LCM
= (5 + 4 + 3)/ 60
= 12/60
= 1/5

Hence, they can do the work in 5 days.

**6. Two taps can fill a cistern in 10 hours and 8 hours respectively. A third tap can empty it in 15 hours. How long will it take to fill the empty cistern, if all of them are opened together?**

**Solution:**

It is given that
First tap can fill a cistern in 10 hours
Second tap can fill a cistern in 8 hours
Third tap can empty the cistern in 15 hours
First tap's one hour work = 1/10
Second tap's one hour work = 1/8
Third tap's one hour work = 1/15
Here if all the taps are opened together then their one hour work = 1/10 + 1/8 – 1/15
Taking LCM
= (12 + 15 – 8)/ 120
So we get
= (27 – 8)/ 120
= 19/120
All the taps can fill the cistern in = 120/19 hours = 6 6/19 hours

**7. Mohit can complete a work in 50 days, whereas Anuj can complete the same work in 40 days.**
**Find:**
**(i) work done by Mohit in 20 days.**
**(ii) work left after Mohit has worked on it for 20 days.**
**(iii) time taken by Anuj to complete the remaining work.**
**Solution:**

It is given that
Mohit can complete a work in 50 days
Anuj can complete the same work in 40 days
Mohit's one day work = 1/50
Anuj's one day work = 1/40

(i) Work done by Mohit in 20 days = 1/50 × 20 = 2/5

(ii) Work left after Mohit has worked on it for 20 days = 1 – 2/5 = (5 – 2)/ 5 = 3/5

(iii) Time taken by Anuj to complete the remaining work = 40 × 3/5 days = 24 days

**8. Joseph and Peter can complete a work in 20 hours and 25 hours respectively.**
**Find:**
**(i) work done by both together in 4 hrs.**
**(ii) work left after both worked together for 4 hrs.**
**(iii) time taken by Peter to complete the remaining work.**
**Solution:**

Time taken by Joseph to complete a work = 20 hours
Time taken by Peter to complete a work = 25 hours
Joseph's one hour work = 1/20
Peter's one hour work = 1/25
So both Joseph' and Peter's work in one hour = 1/20 + 1/25
Taking LCM
= (5 + 4)/ 100

= 9/100

(i) Work done by both together in 4 hrs = 9/100 × 4 = 9/25

(ii) Work left after both worked together for 4 hrs = 1 – 9/25
Taking LCM
= (25 – 9)/ 25
= 16/25

(iii) Time taken by Peter to complete the remaining work = 25 × 16/25 = 16 hours

**9. A is able to complete 1/3 of a certain work in 10 hrs and B is able to complete 2/5 of the same work in 12 hrs.**
**Find:**
**(i) how much work can A do in 1 hour?**
**(ii) how much work can B do in 1 hour?**
**(iii) in how much time will the work be completed, if both work together?**
**Solution:**

It is given that
A can complete 1/3 of a certain work in 10 hours
Time in which A can do full work = (10 × 3)/ 1 = 30 hours
B can complete 2/5 of a certain work in 12 hours
Time in which B can do full work = (12 × 5)/ 2 = 30 hours

(i) Work done by A in 1 hour = 1/30

(ii) Work done by B in 1 hour = 1/30

(iii) Work done by both in 1 hour = 1/30 + 1/30 = 2/30 = 1/15

Hence, both can finish the work in 15 hours.

**10. Shaheed can prepare one wooden chair in 3 days and Shaif can prepare the same chair in 4 days. If they work together, in how many days will they prepare:**
**(i) one chair?**
**(ii) 14 chairs of the same kind?**
**Solution:**

Work done by Shaheed in one day = 1/3
Work done by Shaif in one day = ¼
So the work done by both in 1 day = 1/3 + 1/4
By taking LCM
= (4 + 3)/ 12
= 7/12
So both can prepare the chair in 12/7 = 1 5/7 days
We know that
One chair can be prepared in 1 5/7 days
So 14 chairs can be prepared in = 12/7 × 14 = 24 days

**11. A, B and C together finish a work in 4 days. If A alone can finish the same work in 8 days and B in 12 days, find how long will C take to finish the work.**
**Solution:**

It is given that
A, B and C together finish the work in 4 days
Work done by A, B and C together in 1 day = ¼
A’s one day work = 1/8
B’s one day work = 1/12
C’s one day work = ¼ - (1/8 + 1/12)
By taking LCM
= (6 – [3 + 2])/ 24
= 1/24

Hence, C can finish the work in 24 days.

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