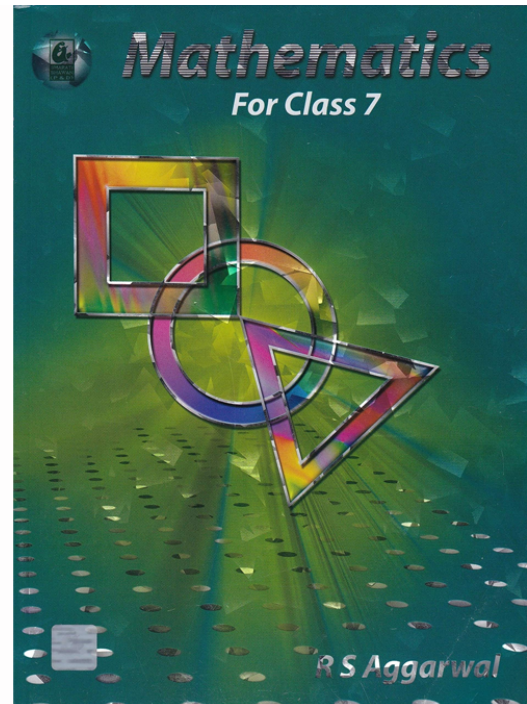


RS Aggarwal Solutions for Class 7 Maths Chapter 9–Unitary Method

Class 7 - Chapter 9 Unitary Method



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Class 7: Maths Chapter 9 solutions. Complete Class 7 Maths Chapter 9 Notes.

RS Aggarwal Solutions for Class 7 Maths Chapter 9–Unitary Method

RS Aggarwal 7th Maths Chapter 9, Class 7 Maths Chapter 9 solutions

Ex 9A

Question 1.

Solution:

Cost of 15 oranges = Rs. 110

Cost of 1 orange = Rs. $\frac{110}{15}$

and cost of 39 oranges = Rs. $\frac{110}{15} \times 39$

= Rs. 22×13 = Rs. 286

Question 2.

Solution:

In Rs. 260, the sugar is bought = 8 kg

and in Re. 1, the sugar is bought = $\frac{8}{260}$ kg

Then in Rs. 877.50, the sugar will be bought = $\frac{8}{260} \times 877.50$ kg

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$$= 8260 \times 87750100$$

$$= 27 \text{ kg}$$

Question 3.**Solution:**

In Rs. 6290, silk is purchased = 37 m

and in Re. 1, silk is purchased = $\frac{37}{6290}$ m

and in Rs. 4420, silk will be purchased 37

$$= \frac{37}{6290} \times 4420 \text{ m} = 26 \text{ m}$$

Question 4.**Solution:**

Rs. 1110 is wages for = 6 days.

Re. 1 will be wages for = $\frac{6}{1110}$ days

and Rs. 4625 will be wages for

$$\begin{aligned} &= \frac{6}{1110} \times 4625 \\ &= \frac{1 \times 4625}{185} = 25 \text{ days} \end{aligned}$$

Question 5.**Solution:**

In 42 litres of petrol, a car covers = 357 km

and in 1 litre, car will cover = $\frac{357}{42}$ km

and in 12 litres, car will cover = $\frac{357}{42} \times 12 = 102 \text{ km}$

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Question 6.**Solution:**

Cost of travelling 900 km is = Rs. 2520

and cost of 1 km will be = Rs. 2520/900

and cost of 360 km will be = Rs. 2520/900 $\times$ 360 = Rs. 1008

Question 7.**Solution:**

To cover a distance of 51 km, time is taken = 45 minutes

$$= \frac{3}{4} \text{ hours}$$

To cover a distance of 1 km, time will be

$$\text{taken} = \frac{3}{4 \times 51} \text{ hr}$$

and to cover a distance of 221 km time

$$\text{will be} = \frac{3 \times 221}{4 \times 51} = \frac{1 \times 221}{4 \times 17}$$

$$= \frac{1 \times 13}{4} = \frac{13}{4} \text{ hours} = 3 \frac{1}{4} \text{ hrs.}$$

$$= 3 \text{ hours } 15 \text{ minutes}$$

Question 8.**Solution:**

If weight is 85.5 kg, then length of iron rod = 22.5 m

If weight is 1 kg, then length of rod will be

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$$= \frac{22.5}{85.5} \text{ m}$$

and if weight is 22.8 kg, then length of rod will be

$$= \frac{22.5 \times 22.8}{85.5} \text{ m}$$

$$= \frac{225 \times 228 \times 10}{10 \times 855 \times 10} \text{ m}$$

$$= \frac{45 \times 228}{2 \times 855} \text{ m} = \frac{1 \times 114}{1 \times 19} = 6 \text{ m}$$

Question 9.

Solution:

In 162 grams, sheets are = 6

$$\text{In 1 gm sheets will be} = \frac{6}{162}$$

and in 13.5 kg or 13500 gms, sheets will be

$$= \frac{6 \times 13500}{162}$$

$$= \frac{1 \times 13500}{27} = 500 \text{ sheets}$$

Question 10.

Solution:

1152 bars of soap can be packed in 8 cartons

1 bar of soap can be packed in

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$$= \frac{8}{1152} \text{ cartons}$$

and 3888 bars of soap will be packed in

$$= \frac{8 \times 3888}{1152} \text{ cartons}$$

$$= \frac{1 \times 3888}{144} = 27 \text{ cartons}$$

Question 11.

Solution:

In 44 mm of thickness, cardboards are = 16

In 1 mm of thickness, cardboards will be

$$= \frac{16}{44}$$

and in 71.5 cm or 715 mm, cardboards will be

$$\begin{aligned} &= \frac{16 \times 715}{44} = \frac{4 \times 715}{11} = 4 \times 65 \\ &= 260 \text{ cardboards} \end{aligned}$$

Question 12.

Solution:

If length of shadow is 8.2 m, then

height of flag staff is = 7 m

If length of shadow is 1 m, then height will

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$$\text{be} = \frac{7}{8.2} \text{ m}$$

and if length of shadow is 20.5 m, then

$$\begin{aligned}\text{height will be} &= \frac{7}{8.2} \times 20.5 = \frac{7 \times 5}{2} \\ &= \frac{35}{2} \text{ m} = 17.5 \text{ m}\end{aligned}$$

Question 13.

Solution:

16.25 m long wall is build by = 15 men

$$1 \text{ m long wall will be built by} = \frac{15}{16.25} \text{ m}$$

$$\text{and 26m long wall be build by} = \frac{15 \times 26}{16.25}$$

$$= \frac{15 \times 26 \times 100}{1625} = 3 \times 2 \times 4 = 24 \text{ men}$$

Question 14.

Solution:

1350 litres of milk cm be consumed by = 60 patients

1 litres of milk can be consumed by = 601350 patients

and 1710 litres of milk can be consumed

$$\begin{aligned}\text{by} &= \frac{60 \times 1710}{1350} \\ &= \frac{2 \times 1710}{45} = 2 \times 38 \\ &= 76 \text{ patients}\end{aligned}$$

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Question 15.**Solution:**

2.8 cm extension is produced by = 150 g.

1 cm extension will be produced by = 1502.8 g

and 19.6 cm extension will be produced by

$$\begin{aligned} &= \frac{150 \times 19.6}{2.8} \text{ g} = \frac{150 \times 196 \times 10}{10 \times 28} \text{ g} \\ &= \frac{150 \times 196}{28} = 150 \times 7 \text{ g} \\ &= 1050 \text{ g} = 1.05 \text{ kg} \\ &= 1 \text{ kg } 50 \text{ g.} \end{aligned}$$

Ex 9B**Question 1.****Solution:**

48 men can dig a trench in = 14 days

1 man will dig the trench in = 14 x 48 days (less men more days)

28 men will dig the trench in = 14x48/28 (more men less days)

= 24 days

Question 2.**Solution:**

In 30 days, a field is reaped by = 16 men

In 1 day, it will be reaped by = 16 x 30 (less days, more men)

and in 24 days, it will be reaped by = 16x30/24 men (more days, less men)

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= 48024

= 20 men

Question 3.

Solution:

In 13 days, a field is grazed by = 45 cows.

In 1 day, the field will be grazed by = 45×13 cows (less days, more cows)

and in 9 days the field will be grazed by = 45×139 cows (more days, less cows)

= $5 \times 13 = 65$ cows

Question 4.

Solution:

16 horses can consume corn in = 25 days

1 horse will consume it in = 25×16 days (Less horse, more days)

and 40 horses will consume it in = 25×1640 days (more horses, less days)

= 10 days

Question 5.

Solution:

By reading 18 pages a day, a book is finished in = 25 days

By reading 1 page a day, it will be finished = 25×18 days (Less page, more days)

and by reading 15 pages a day, it will be finished in = 25×1815 days (more pages, less days)

= $5 \times 6 = 30$ days

Question 6.

Solution:

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Reeta types a document by typing 40 words a minute in = 24 minutes

She will type it by typing 1 word a minute in = 24×40 minutes (Less speed, more time)

Her friend will type it by typing 48 words 24×40 a minute in = $24 \times 40 \div 48$ minutes

(more speed, less time)

= 20 minutes

Question 7.

Solution:

With a speed of 45 km/h, a bus covers a distance in = 3 hours 20 minutes

= $3 \frac{2}{3}$ hours

With a speed of 1 km/h it will cover the distance $m = 10 \times 45 \times 3 \frac{2}{3}$ h

(Less speed, more time)

and with a speed of 36 km/h, it will cover the distance in

= $10 \times 45 \times 3 \frac{2}{3} \div 36$ hr (more speed, less time)

= 256 h

= 416 h

= 4 hr 10 minutes

Question 8.

Solution:

To make 240 tonnes of steel, material is sufficient in = 1 month or 30 days

To make 1 tonne of steel, it will be sufficient in = $30 \div 240$ days (Less steel, more days)

To make $240 + 60 = 300$ tonnes of steel it will be sufficient in = $30 \div 240 \times 300$ days

= 24 days (more steel, less days)

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Question 9.**Solution:**

In the beginning, number of men = 210

After 12 days, more men employed = 70

Total men = $210 + 70 = 280$

Total period = 60 days.

After 12 days, remaining period = $60 - 12 = 48$ days

Now 210 men can build the house in = 48 days

and 1 man can build the house in = 48×210 days (less men, more days) .

280 men can build the house in = $48 \times 210 / 280$ days

(more men, less days)

= 36 days

Question 10.**Solution:**

In 25 days, the food is sufficient for = 630 men

In 1 day, the food will be sufficient for = 630×25 men (less days, more men)

and in 30 days, the food will be sufficient for = $630 \times 25 / 30$ hr

(more days less men)

= 525 men

Number of men to be transferred = $630 - 525 = 105$ men

Question 11.**Solution:**

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Number of men in the beginning = 120

Number of men died = 30

Remaining = $120 - 30 = 90$ men

Total period = 200 days

No. of days passed = 5

Remaining period = $200 - 5 = 195$

Now, The food lasts for 120 men for = 195 days

The food will last for 1 man for = 195×120 days (Less men, more days)

The food will last for 90 men for = $195 \times 120 / 90$

(more men less days)

= $65 \times 4 = 260$ days

Question 12.

Solution:

Period in the beginning = 28 days

No. of days passed = 4 days.

Remaining period = $28 - 4 = 24$ days

The food is sufficient for 24 days for = 1200 soldiers

The food will be sufficient for 1 day for = 1200×24 soldiers (Less days, more men)

and the food will be sufficient for 32 days = $1200 \times 24 / 32$

= 900 soldiers (more days, less men)

No. of soldiers who left the fort = $1200 - 900 = 300$ soldiers

Ex 9C

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Objective Questions.

Marks (✓) against the correct answer in each of the following :

Question 1.

Solution:

(c)

Weight of 4.5 m rod = 17.1 kg

$$\text{Weight of 1 m rod} = \frac{17.1}{4.5} \text{ kg}$$

and weight of 12 m rod

$$= \frac{17.1 \times 12}{4.5} = \frac{171 \times 12 \times 100}{100 \times 45} \text{ kg}$$

$$= \frac{19 \times 12}{5} = \frac{228}{5} = 45.6 \text{ kg}$$

Question 2.

Solution:

(d) None of these 0.8 cm represent the map = 8.8 km

$$1 \text{ cm will represent on the map} = \frac{8.8}{0.8} \text{ km}$$

∴ 80.5 cm will represent on the map

$$= \frac{8.8 \times 80.5}{0.8} = \frac{88 \times 805 \times 10}{10 \times 8 \times 10}$$

$$= \frac{8855}{10} = 885.5 \text{ km}$$

Question 3.

Solution:

(c) In 20 minutes, Raghu covers = 5 km

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in 1 minutes, he will cover = 520 km

and in 50 minutes, he will cover

$$= \frac{5}{20} \times 50$$
$$= \frac{25}{2} \times = 12.5 \text{ km}$$

Question 4.

Solution:

(d)

No. of men in the beginning = 500

More men arrived = 300

No. of total men = 500 + 300 = 800

For 500 men, provision are for = 24 days

For 1 man, provision will be = 24 x 500 days (less men, more days)

and for 800 men, provision will be = 24800 x 500 days

(more men less days)

= 15 days

Question 5.

Solution:

(b) Total cistern = 1

Filled in 1 minute = 45

Unfilled = 1 – 45 = 15

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45 of cistern is filled in = 1 minutes = 60 seconds

1 full cistern can be filled in = $60 \times 54 = 75$ seconds

More time = $75 - 60 = 15$ seconds

Question 6.

Solution:

(a)

15 buffaloes can eat as much as = 21 cows

1 buffalo will eat as much as = $21/15$ cows

35 buffaloes will eat as much as

= $21 \times 35/15$ cows = 49 cows

Question 7.

Solution:

(b) 4 m long shadow is of a tree of height = 6 m

1 m long shadow of flagpole will of height = 64 m

50 m long shadow, the height of pole 6 will be = $64 \times 50 = 75$ m

Question 8.

Solution:

(b) 8 men can finish the work in = 40 days

1 man will finish it in = 40×8 days (less men, more days)

$8 + 2 = 10$ men will finish it in = $40 \times 8/10$ days

(more men, less days)

= 32 days

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Question 9.**Solution:**

(b)

16 men can reap a field in = 30 days

1 man will reap the field in = 30×16 days

and 20 men will reap the field in = $30 \times 16 \div 20 = 24$ days

Question 10.**Solution:**

(c) 10 pipe can fill tank in = 24 minutes

1 pipe will fill it in = 24×10 minutes (less pipe, more time)

and $10 - 2 = 8$ pipes will fill the tank in

= $24 \times 10 \div 8 = 30$ minutes

Question 11.**Solution:**

(d) 6 dozen or $6 \times 12 = 72$ eggs

Cost of 72 eggs is = Rs. 108

Cost of 1 egg will be = Rs. $108 \div 72$

and cost of 132 eggs will be 108

= Rs. $108 \div 72 \times 132 =$ Rs. 198

Question 12.**Solution:**

(b) 12 workers take to complete the work = 4 hrs.

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1 worker will take = 4×12 hrs. (less worker, more time)

15 workers will take = $4 \times 12 \div 15$ hrs. (more workers, less time)

= 165 hr. = 3 hrs. 12 min

Question 13.

Solution:

(a) 27 days – 3 days = 24 days

Men = $500 + 300 = 800$

For 500 men, provision is sufficient = 24 days

For 1 man, provision will be = 24×500 (less man, more days)

and for $500 + 300 = 800$ men provision

will be sufficient = $24 \times 500 \div 800 = 15$ days

(more men, less days)

Question 14.

Solution:

(c) No. of rounds of rope = 140

Radius of base of cylinder = 14 cm

Radius of second cylinder of cylinder = 20 cm

If radius is 14 cm, then rounds of rope are = 140

If radius is 1 cm, then round = 140×14 (less radius more rounds)

and if radius is 20 cm, then rounds will

be = $140 \times 14 \div 20 = 98$ (more radius less rounds)

Question 15.

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Solution:

(d) A worker makes toy in 23 hr = 1

He will make toys in 1 hr = 1×32

and will make toys in 223 hrs. = $1 \times 32 \times 223$

= 11 (more time more toys)

Question 16.**Solution:**

(d) A wall is constructed in 8 days by = 10 men

It will be constructed in 1 day by = 10×8 men (less time, more men)

10×8

$$\text{and it will be constructed in } \frac{1}{2} = \frac{10 \times 8}{\frac{1}{2}}$$

$$= \frac{10 \times 8 \times 2}{1} = 160 \text{ men}$$

More men required = $160 - 10 = 150$



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He was born on January 2, 1946 in a village of Delhi. He graduated from Kirori Mal College, University of Delhi. After completing his M.Sc. in Mathematics in 1969, he joined N.A.S. College, Meerut, as a lecturer. In 1976, he was awarded a fellowship for 3 years and joined the University of Delhi for his Ph.D. Thereafter, he was promoted as a reader in N.A.S. College, Meerut. In 1999, he joined M.M.H. College, Ghaziabad, as a reader and took voluntary retirement in 2003. He has authored more than 75 titles ranging from Nursery to M. Sc. He has also written books for competitive examinations right from the clerical grade to the I.A.S. level.

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