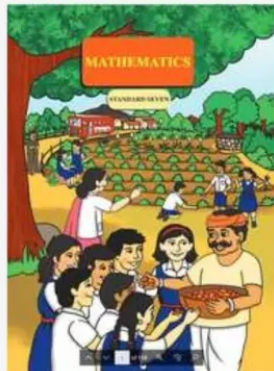


Maharashtra Board Solutions Class 7-Maths

(Practice Set 39): Chapter 9- Direct Proportion and Inverse Proportion

BOOK SOLUTIONS
CLASS 7
MATHS

CHAPTER 9
Direct Proportion and Inverse Proportion



Maharashtra Board Solutions→



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Postal Address

IndCareer.com, 52, Shilpa Nagar, Somalwada Nagpur - 440015
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Maharashtra Board Solutions Class 7-Maths

(Practice Set 39): Chapter 9- Direct Proportion and Inverse Proportion

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

Maharashtra Board Solutions Class 7-Maths (Practice Set 39): Chapter 9- Direct Proportion and Inverse Proportion

Maharashtra Board 7th Maths Chapter 9, Class 7 Maths Chapter 9 solutions

Question 1.

Suresh and Ramesh together invested Rs 144000 in the ratio 4 : 5 and bought a plot of land. After some years they sold it at a profit of 20%. What is the profit each of them got?

Solution:

Total investment = Rs 144000

Profit earned = 20%

$\therefore$ Total profit = 20% of 144000 = $20/100 \times 144000$ = Rs 28800

Proportion of investment of Suresh and Ramesh = 4:5

Let the profit of Suresh be Rs 4x and that of Ramesh be Rs 5x.

$$4x + 5x = 28800$$

$$\therefore 9x = 28800$$

$$\therefore x = 28800/9$$

$$= 3200$$

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∴ Suresh's profit = $4x = 4 \times 3200 = \text{Rs } 12800$

Ramesh's profit = $5x = 5 \times 3200 = \text{Rs } 16000$

∴ The profit earned by Suresh and Ramesh are Rs 12800 and Rs 16000 respectively.

Question 2.

Virat and Samrat together invested Rs 50000 and Rs 120000 to start a business. They suffered a loss of 20%. How much loss did each of them incur?

Solution:

Total investment = Rs 50000 + Rs 120000 = Rs 170000

Loss incurred = 20%

∴ Total loss = 20% of 170000 = $20/100 \times 170000 = \text{Rs } 34000$

Proportion of investment = 50000 : 120000

= 5 : 12 (Dividing by 10000)

Let the loss incurred by Virat be Rs $5x$ and that by Samrat be Rs $12x$.

$5x + 12x = 34000$

∴ $17x = 34000$

∴ $x = 34000/17 = 2000$

∴ Virat's loss = $5x = 5 \times 2000 = \text{Rs } 10000$

Samrat's loss = $12x = 12 \times 2000 = \text{Rs } 24000$

∴ The loss incurred by Virat and Samrat are Rs 10000 and Rs 24000 respectively.

Question 3.

Shweta, Piyush and Nachiket together invested Rs 80000 and started a business of selling sheets and towels from Solapur. Shweta's share of the capital was Rs 30000 and Piyush's Rs 12000. At the end of the year they had made a profit of 24%. What was Nachiket's investment and what was his share of the profit?

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Solution:

Total investment = Rs 80000

Nachiket's investment = Total investment – (Shweta's investment + Piyush's investment)

$$= 80000 - (30000 + 12000)$$

$$= 80000 - 42000 = \text{Rs } 38000$$

Profit earned = 24%

$$\therefore \text{Total profit} = 24\% \text{ of } 80000 = 24/100 \times 80000 = \text{Rs } 19200$$

Proportion of investment = 30000 : 12000 : 38000

$$= 15 : 6 : 19 \dots (\text{Dividing by } 2000)$$

Let the profit of Shweta, Piyush and Nachiket be Rs 15x, Rs 6x and Rs 19x respectively.

$$15x + 6x + 19x = 19200$$

$$\therefore 40x = 19200$$

$$\therefore x = 19200/40 = 480$$

$$\therefore \text{Nachiket's profit} = 19x = 19 \times 480 = \text{Rs } 9120$$

$\therefore$ Nachiket's investment is Rs 38000 and his profit is Rs 9120.

Question 4.

A and B shared a profit of Rs 24500 in the proportion 3 : 7. Each of them gave 2% of his share of the profit to the Soldiers' Welfare Fund. What was the actual amount given to the Fund by each of them?

Solution:

Proportion of share = 3:7

Let the profits of A and B be Rs 3x and Rs 7x respectively.

$$3x + 7x = 24500$$

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$$\therefore 10x = 24500$$

$$\therefore x = 24500 \div 10 = 2450$$

$$\text{Profit earned by A} = 3x = 3 \times 2450 = \text{Rs } 7350$$

Amount given by A = 2% of his profit

$$= 2100 \times 7350 = \text{Rs } 147$$

$$\text{Profit earned by B} = 7x = 7 \times 2450 = \text{Rs } 17150$$

Amount given by B = 2% of his profit

$$= 2100 \times 17150 = \text{Rs } 343$$

$\therefore$ The amount given by A and B to the Soldiers' Welfare Fund are Rs 147 and Rs 343 respectively.

Question 5.

Jaya, Seema, Nikhil and Neelesh put in altogether Rs 360000 to form a partnership, with their investments being in the proportion 3 : 4 : 7 : 6. What was Jaya's actual share in the capital? They made a profit of 12%. How much profit did Nikhil make?

Solution:

$$\text{Total investment} = \text{Rs } 360000$$

$$\text{Profit earned} = 12\%$$

$$\therefore \text{Total profit} = 12\% \text{ of } 360000$$

$$= 12100 \times 360000 = \text{Rs } 43200$$

$$\text{Proportion of investment} = 3 : 4 : 7 : 6$$

Let the investment of Jaya, Seema, Nikhil and Neelesh be Rs 3x, Rs 4x, Rs 7x and Rs 6x respectively.

$$3x + 4x + 7x + 6x = 360000$$

$$\therefore 20x = 360000$$

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$$\therefore x = 36000020$$

$$= 18000$$

$$\therefore \text{Jaya's investment} = 3x = 3 \times 18000 = \text{Rs } 54000$$

Also, profit made by them is Rs 43200

$$\therefore 3x + 4x + 7x + 6x = 43200$$

$$\therefore 20x = 43200$$

$$\therefore x = 4320020$$

$$= 2160$$

$$\therefore \text{Nikhil's profit} = 7x = 7 \times 2160 = \text{Rs } 15120$$

$\therefore$ Jaya's share in the capital was Rs 54000 and the profit made by Nikhil was Rs 15120.

Intext Questions and Activities

Question 1.

Saritaben, Ayesha and Meenakshi started a business by investing Rs 2400, Rs 5200 and Rs 3400. They made a profit of 50%. If they reinvested all their profit by adding it to the capital, find out the proportions of their shares in the capital during the following year. (Textbook pg. no. 67)

Solution:

$$\text{Total investment} = \text{Rs } 2400 + \text{Rs } 5200 + \text{Rs } 3400 = \text{Rs } 11000$$

$$\text{Total profit} = 50\% \text{ of } 11000 = 50100 \times 11000 = \text{Rs } 5500$$

$$\text{Proportion of shares} = 2400 : 5200 : 3400$$

$$= 12 : 26 : 17 \dots (\text{Dividing by } 200)$$

Let the profit of Saritaben, Ayesha and Meenakshi be Rs 12x, Rs 26x and Rs 17x respectively.

$$12x + 26x + 17x = 5500$$

$$\therefore 55x = 5500$$

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$$\therefore x = 100$$

$$\therefore \text{Saritaben's profit} = 12x = 12 \times 100 = \text{Rs } 1200$$

$$\text{Ayesha's profit} = 26x = 26 \times 100 = \text{Rs } 2600$$

$$\text{Meenakshi's profit} = 17x = 17 \times 100 = \text{Rs } 1700$$

$$\therefore \text{Saritaben's new investment} = 2400 + 1200 = \text{Rs } 3600$$

$$\text{Ayesha's new investment} = 5200 + 2600 = \text{Rs } 7800$$

$$\text{Meenakshi's new investment} = 3400 + 1700 = \text{Rs } 5100$$

$$\therefore \text{New proportion of shares} = 3600 : 7800 : 5100$$

$$= 12 : 26 : 17 \dots (\text{Dividing by } 300)$$

$$\therefore \text{The proportion of the shares in the capital during the following year is } 12 : 26 : 17$$

Question 2.

Are the amount of petrol filled in a motorcycle and the distance traveled by it, in direct proportion? (Textbook pg. no. 63)

Solution:

Yes.

If amount of petrol filled in the motorcycle is less, it will travel less distance and if the amount of petrol filled is more, it will travel more distance.

Hence, the amount of petrol filled in the motorcycle and the distance traveled by it are in direct proportion.

Question 3.

Can you give examples from science or everyday life of quantities that vary in direct proportion? (Textbook pg. no. 63)

Solution:

1. Number of chairs and the number of spectators.
2. Quantity (litres) of water and number of vessels required to store the water.

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- Chapter 5- Operations on Rational Numbers (Practice Set 24)
- Chapter 5- Operations on Rational Numbers (Practice Set 25)
- Chapter 6- Indices (Practice Set 26)
- Chapter 6- Indices (Practice Set 27)
- Chapter 6- Indices (Practice Set 28)
- Chapter 6- Indices (Practice Set 29)
- Chapter 6- Indices (Practice Set 30)
- Chapter 7- Joint Bar Graph (Practice Set 31)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 32)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 33)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 34)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 35)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 36)
- Chapter 9- Direct Proportion and Inverse Proportion (Practice Set 37)
- Chapter 9- Direct Proportion and Inverse Proportion (Practice Set 38)
- Chapter 9- Direct Proportion and Inverse Proportion (Practice Set 39)
- Chapter 10- Bank and Simple Interest (Practice Set 40)
- Chapter 10- Bank and Simple Interest (Practice Set 41)
- Chapter 11- Circle (Practice Set 42)

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- Chapter 12- Perimeter and Area (Practice Set 44)
- Chapter 12- Perimeter and Area (Practice Set 45)
- Chapter 12- Perimeter and Area (Practice Set 46)
- Chapter 12- Perimeter and Area (Practice Set 47)
- Chapter 13- Pythagoras Theorem (Practice Set 48)
- Chapter 13- Pythagoras Theorem (Practice Set 49)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 50)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 51)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 52)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 53)
- Chapter 15- Statistics (Practice Set 54)
- Chapter 14- Statistics (Practice Set 55)

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About About Maharashtra State Board (MSBSHSE)

The Maharashtra State Board of Secondary and Higher Secondary Education or MSBSHSE (Marathi: महाराष्ट्र राज्य माध्यमिक आणि उच्च माध्यमिक शिक्षण मंडळ), is an **autonomous and statutory body established in 1965**. The board was amended in the year 1977 under the provisions of the Maharashtra Act No. 41 of 1965.

The Maharashtra State Board of Secondary & Higher Secondary Education (MSBSHSE), Pune is an independent body of the Maharashtra Government. There are more than 1.4 million students that appear in the examination every year. The Maha State Board conducts the board examination twice a year. This board conducts the examination for SSC and HSC.

The Maharashtra government established the Maharashtra State Bureau of Textbook Production and Curriculum Research, also commonly referred to as Ebalbharati, in 1967 to take up the responsibility of providing quality textbooks to students from all classes studying under the Maharashtra State Board. MSBHSE prepares and updates the curriculum to provide holistic development for students. It is designed to tackle the difficulty in understanding the concepts with simple language with simple illustrations. Every year around 10 lakh students are enrolled in schools that are affiliated with the Maharashtra State Board.

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How many state boards are there in Maharashtra?

The Maharashtra State Board of Secondary & Higher Secondary Education, conducts the HSC and SSC Examinations in the state of Maharashtra through its nine Divisional Boards located at Pune, Mumbai, Aurangabad, Nasik, Kolhapur, Amravati, Latur, Nagpur and Ratnagiri.

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IndCareer.com
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Somalwada
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