

INTERNATIONAL INDIAN SCHOOL, DAMMAM

WORKSHEET– 2025 – 26

MIDDLE SECTION

CLASS – 8

SUBJECT – MATHEMATICS

CHAPTER – 7 – COMPARING QUANTITIES

CHOOSE THE CORRECT ANSWER:

- The ratio of 10m to 10 km is:
(a) 1:10 (b) 1:100 (c) 1:1000 (d) 1000:1
- The percentage of 2:5 is
(a) 20% (b) 40% (c) 60% (d) 50%
- An item marked at Rs.1000 is sold for Rs. 800. The discount % is:
(a)10% (b) 15% (c) 20% (d) 25%
- The cost of a fan at a shop is Rs. 6000. The sales tax charged was 5%. The bill amount is:
(a) 7000 (b) 5500 (c) 6300 (d)6800
- If 40% of students passed in the Mathematics test, out of 40 students in the class. What is the number of students who have passed?
(a) 10 (b) 16 (c) 5 (d) 11

ASSERTION AND REASON QUESTIONS

- Assertion (A) – The marked price of a book is Rs 100. The shopkeeper gives 25% discount on it. The sale price of the book is Rs. 75.
Reasons (R) – Discount is a reduction given on the marked price (MP) of the article.
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true
- Assertion (A) –A sofa-set was bought for Rs 10000. Its value depreciated at the rate of 10% per annum. The value of sofa – set after 2 years is Rs.8100.
Reasons (R) –Depreciation means the increase of value due to use and age of the item.
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

ANSWER THE FOLLOWING:

- A person goes shopping and spends 70% of his money. If he is now left with Rs. 900, find out how much he had in the beginning.
- Nandini purchased a sweater for Rs.3000 when a discount voucher of 25% was provided. Find the price of sweater before discount?
- Rashida purchased an air-conditioner for Rs.7700 including a VAT of 10%. Find the actual price of the air conditioner before VAT was added.
- What amount Harish has to pay at the end of 3 years of Rs. 40,000 at an interest of 15% compounded annually?

12. The present population of a town is 125000 and it is increasing at the rate of 8% per annum. What will be the population of the town after 2 years?
13. A car was bought for Rs 5,00,000. Its value depreciated at the rate of 8% per annum. Find the value of the car after 2 years.

CASE STUDY QUESTIONS

14. A survey was conducted among primary school students, and were asked about how much time they spend on tuition and how much time on self-study. It was found that 100 students take tuition for 1 hour to 1.5 hours. The distribution of students according to time they take tuition is, 35% take tuition for 1.5 hours to 2 hours, 25% take tuitions for 1hour to 1.5hours, 40% did not take tuition at all.
- (a) How many students were surveyed?
- (b) How many students do self-study?
- (c) How many students take tuitions for more than 1.5 hours?
15. A person invests ₹75,000 in a bank at 10% simple interest and another person invest the same amount ₹75,000 at 10% compound interest for 2 years.
- (a) What is the simple interest earned after 2 years?
- (b) What is the compound interest earned after 2 years?
- (c) What is the difference between the compound interest and simple interest amounts?
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INTERNATIONAL INDIAN SCHOOL,DAMMAM

MIDDLE SECTION

Class: VIII

WORKSHEET 2025-2026 Subject: Mathematics

Chapter 8

Algebraic Expressions and Identities

I. Choose the Correct Answer

1) If the expressions are $x-y+xy$, $y-z+yz$, $z-x+zx$ then their sum is:

- a) $x+y+z$ b) $xy+yz+zx$ c) $x+y+z+xy+yz+zx$ d) 0

2) Find the product of $4p^3$ and $3p^2$

- (a) $12p^5$ (b) $7p^6$ (c) $7p^5$ (d) $12p^6$

3) The volume of a rectangular box with length $2p$ breadth $4q$, and height $8r$ is:

- (a) $14pqr$ (b) $24pqr$ (c) $64pqr$ (d) $16pqr$

4) Find the product of $(x + y)$ and $5x^2y$

- (a) $5x^2y + 5x^2y^2$ (b) $5x^3y + 5x^2y^2$ (c) $10x^3y^2$ (d) $10x^2y^3$

5) $(y - 4)(7y - 3) =$ _____

- (a) $7y^2 + 31y - 12$ (b) $8y^2 - 28y + 7$ (c) $8y^2 - 8y + 12$ (d) $7y^2 - 31y + 12$

6) **Assertion (A):** The expression $(x+2)(x-3)$ simplifies to $x^2 - x - 6$.

Reason (R): Multiplying binomials follows distributive law: every term in one binomial multiplies every term in the other binomial

- (a) Both A and R are true, and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true

7) **Assertion (A):** $7xy^2$, $14x^2y$, $17xy$ are like terms.

Reason (R): Like terms must have the same variables with the same powers.

Options:

- (a) Both A and R are true, and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true

8) Add $(3x^2+4y-z), (5y+2z-4x^2), (7x^2-3y+z)$

9) Subtract $(6a^2-3ab+7b^2-5)$ from $(10a^2+2ab-4b^2+8)$

10) Find the product:
 $-4a(6a^2-3a+5)$

11) **Subtract:**

$6a(4b-3a+2)$ from $9a(5a-2b+7)$

12) Find the product: $(5mn+2n^2)(m-n)$

13) Simplify: $(p+q)(r-s)+(p-q)(r+s)+2(pr+qs)$

14) Simplify: $(y^2-7)(y+7)+49$

CASE STUDY



A company makes a cuboidal gift box.
The area of the top surface is given by $(x + 7y)(7x - y)$.

Questions

1. Expand the expression using algebraic multiplication.
2. Simplify the expression.
3. If $x = 2$ and $y = 1$, find the area.
4. Explain which algebraic law is applied in multiplying the expressions.

INTERNATIONAL INDIAN SCHOOL, DAMMAM.
MIDDLE SECTION
WORKSHEET- 2025-2026

GRADE: 8
MENSURATION

SUB: MATHEMATICS

Choose the correct answer from the choices for each question.

1. What is the area of a trapezium with parallel sides 8 cm and 5cm, and height 4 cm?
a) 26 cm^2 b) 30 cm^2 c) 20 cm^2 d) 18 cm^2
 2. The area of a rhombus with diagonals 10cm and 8cm is:
a) 40 cm^2 b) 80 cm^2 c) 32 cm^2 d) 50 cm^2
 3. Find the total surface area (TSA) of a cube with side 5cm.
a) 125 cm^2 b) 100 cm^2 c) 150 cm^2 d) 50 cm^2
 4. What is the lateral surface area (LSA) of a cylinder with radius 7cm and height 10cm?
(Take $\pi=22/7$)
a) 220 cm^2 b) 440 cm^2 c) 154 cm^2 d) 308 cm^2
 5. The volume of a cuboid with length 12cm, breadth 6cm, and height 5cm is:
a) 120 cm^3 b) 360 cm^3 c) 420 cm^3 d) 560 cm^3
-

Assertion and Reason Questions:

1. Assertion (A): The total surface area of a cylinder includes the areas of both circular bases and the curved surface.

Reason (R): The area of the curved surface alone is called the lateral surface area.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, R is false.
- d) A is false R is true

2. Assertion (A): The volume of a cube increases if the side is doubled.

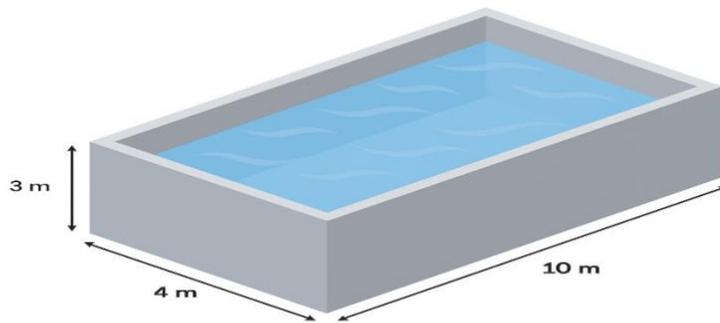
Reason (R): The volume of a cube depends on the cube of its side length.

- a) Both A and R are true, and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.

- c) A is true, R is false.
 - d) A is false R is true
3. Assertion (A): If the TSA and radius of a cylinder are known, it is possible to find the height.
- Reason (R): The TSA of a cylinder only contains the radius.
- a) Both A and R are true, and R is the correct explanation of A.
 - b) Both A and R are true, but R is not the correct explanation of A.
 - c) A is true, R is false.
 - d) Both A and R are false.

Case Study 1:

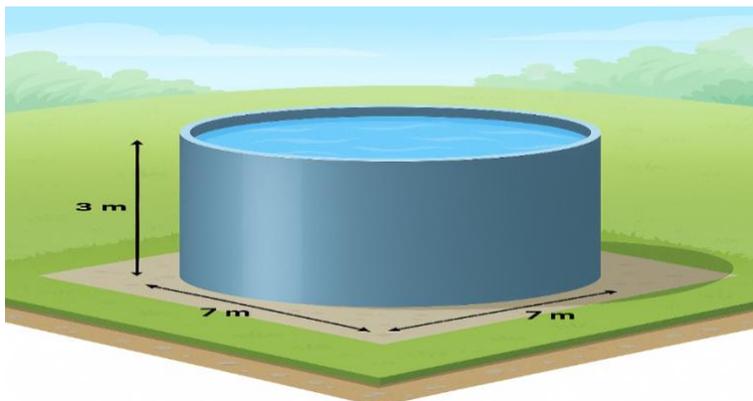
A rectangular water tank is 10 m long, 4m wide, and 3m high.



- a) Write the formula for TSA of a cuboid.
- b) What is the total surface area to be painted?
- c) How much water can the tank hold in m^3 ?

Case Study 2:

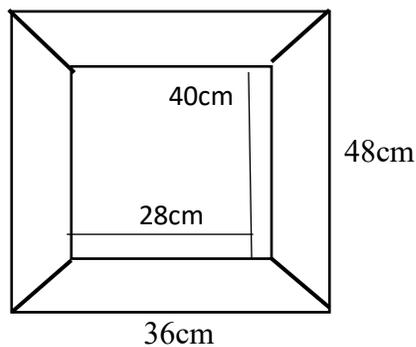
A cylindrical drum has a radius of 7m and a height of 3m is made from a metal sheet.



- Which formula we will use to find how much sheet of metal is required.
- How much sheet of metal is required?
- What is the volume of drum?

Answer the following questions:

- A cylindrical water tank has a radius of 10 cm. The total surface area is 1256 cm^2 . Find the height of the tank.
- The area of a trapezium is 480 cm^2 , the distance between two parallel sides is 15 cm and one of the parallel side is 10 cm. find the other parallel side.
- Diagram of the adjacent picture frame has outer dimensions = $48 \text{ cm} \times 36 \text{ cm}$ and inner dimensions $40 \text{ cm} \times 28 \text{ cm}$. Find the area of each section of the frame, if the width of each section is same.



- Find the height of a cuboid whose volume is 225 cm^3 and base area is 25 cm^2 .
- A godown is in the form of a cuboid of measures $60 \text{ m} \times 30 \text{ m} \times 20 \text{ m}$. How many cuboidal boxes can be stored in it if the volume of one box is 0.9 m^3 ?

INTERNATIONAL INDIAN SCHOOL, DAMMAM

MIDDLE SECTION

WORKSHEET (2025 – 26)

CLASS: VIII

SUBJECT: MATHEMATICS

1. Express the number 0.00001274 in standard form.

- a) 1.274×10^5 b) 1.274×10^{-5} c) 12.75×10^4 d) 12.75×10^{-4}

2. If the diameter of the Sun is 1.4×10^9 meters and the diameter of the Earth is 1.2×10^7 meters, calculate approximately how many times larger the Sun is compared to the Earth.

- a) 10 times b) 100 times c) 1000 times d) 10000 times

3. Which of the following is the standard form of 31860000000?

- a) 3.186×10^{10} b) 31.86×10^6 c) 3186×10^7 d) 3.186×10^8

4. What is the result of $5^{-2} \div 5^4$?

- a) 5^{-6} b) 5^2 c) 5^{-8} d) 5^6

5. If $(3^{-7} \div 3^{-10}) \times 3^{-5}$ is simplified using the laws of exponents, what is the result?

- a) 3^{-2} b) 3^2 c) 3^{-8} d) 3^8

Assertion and Reasoning

7) Assertion (A): $210^0 = 1$

Reason (R): Any Number raised to the zero power equals 1 by definition.

- a) Both A and R are true, and R is the correct explanation of A.
b) Both A and R are true, but R is not the correct explanation of A.
c) A is true, R is false.
d) A is false, R is true.

6) Assertion (A): $2^{-3} = 1 \div 2^3$

Reason (R): Negative exponents represent reciprocals of the positive exponent form.

- a) Both A and R are true, and R is the correct explanation of A.

b) Both A and R are true, but R is not the correct explanation of A.

c) A is true, R is false.

d) A is false, R is true.

Solve the following

8) Using the laws of exponents, simplify and write the answer in exponential form.

$$\frac{(-4)^{-3} \times (-5)^2}{(-5)^{-4}}$$

9) a) Express the number 1256.249 in expanded form using exponents, including the decimal part.

b) Express the number 1425.36 in its expanded form using exponents, including the decimal part.

10) Calculate and simplify the expression $(3^{-7} \div 3^{-10}) \times 3^{-5}$ using the laws of exponents.

11) Simplify the expression $(2^{-3} \times 2^4) \div 2^2$ using the laws of exponents and write the answer in exponential form.

12) Using the laws of exponents, simplify and express in exponential form:

$$\frac{(-8)^{-4} \times (-8)^{-3}}{(-8)^{-12}}$$

Case study Questions

One Scientist in his Research lab placed Bacteria in a small thickness sheet for his Research. The Size of one Bacteria is 0.0000005 m. The Size of the small thickness sheet is 0.05 mm.



a. Find the Product of the sizes of small thickness sheet and One Bacteria.

b. Find the Ration between the size of one bacterium and Sheet.

INTERNATIONAL INDIAN SCHOOL ,DAMMAM
MIDDLE SECTION
WORKSHEET 2025-26

CLASS :VIII
SUB: MATHEMATICS

CH – 11 DIRECT AND INVERSE PROPORTION

1..If x and y are in direct proportion, which of the following is correct?

- a) $(x + y)$ is constant b) $(x - y)$ is constant
c) xy is constant d) x/y is constant

2.If a and b varies inversely as each other and $a = 16$ when $b = 4$. Find **b** when $a = 8$

- a) 8 b) 4 c) 64 d) none of these

3.If $x=5y$, then x and y vary _____ with each other.

4..Pranshu takes 125 minutes in walking a distance of 100m. What distance would he cover in 315 minutes?

- a) 250m b) 252m c) 254m d) none of these

5.Which of the following vary inversely with each other?

- (a) speed and distance covered. (b) distance covered and taxi fare. (c) distance travelled and time taken. (d) speed and time taken.

6. Assertion (A) –10 metres of cloth cost Rs 1000. 4 metres costs Rs 400

Reasons (R) –A direct proportion shows the direct the relation between two quantities.

- a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

7.Assertion (A) –If $x = ky$ and when $y = 4$, $x = 8$ then $k = 4$

Reasons (R) –A direct proportion shows the direct the relation between two quantities. An inverse proportion shows inverse or indirect relation between two quantities

- a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

ans d

8. Arati purchased 24 packets of crayons for ₹ 432.How many packets of the same crayons can be purchased for ₹ 270?

9. A van is travelling at a speed of 55km/hr. How far will it travel in 21 5 hours?

INTERNATIONAL INDIAN SCHOOL ,DAMMAM
MIDDLE SECTION
WORKSHEET 2025-26

CLASS :VIII
SUB: MATHEMATICS

10. If 15 workers can build a wall in 48 hours. How many more workers will be required to do the same work in 30 hours?
11. If 20 workers can build a wall in 45 hours. How many more workers will be required to do the same work in 30 hours?
12. The hostel of a college having 320 students has a stock of food for 60days. (1) If 20 students leave the hostel, in how many days will the food last? (2) If the stock of food last for 48 days, how many students are there in the hostel?
13. Assume that the railway fare is directly proportional to the distance of the journey. The table shows distance and the fare. Find the missing values.

Distance in km	200	600	b	840	d
Fare in ₹	250	a	900	c	1200

Case Study Based Questions:

14. One day Maths teacher explaining about Direct and Inverse proportion with the help of many examples. He has given one example. The cost of 5 metres of a particular quality of cloth is Rs 250. He tabulated the cost of 2, 6, 10 and 15 metres of cloth of the same type as shown in below table and ask the cost to the students one by one.



INTERNATIONAL INDIAN SCHOOL ,DAMMAM
MIDDLE SECTION
WORKSHEET 2025-26

CLASS :VIII
SUB: MATHEMATICS

x	2	5	6	10	15	
y	y1	250	y3	y4	y5	

Answer the following questions based on the above information:

- i) Find the value of y2.
- ii) Find the value of y3.
- iii) Find the value of y4.
- iv) Find the value of y5.

15. A four days scout and guide camp were arranged by the school for class 8 students. The students were so excited to go for the camp. Based on this context, answer the following question:



- i) The school arranged 6 buses to take 150 students to the camp. If 75 more students are joined, how many buses are required in all?
a) 3 b) 10 c) 9 d) 15
- ii) In the camp, they assigned some jobs to the students. 45 persons complete a job in 20 minutes. How many minutes will 30 persons take to complete the same job?
a) 15 b)30 c)45 d)90
- iii) The camp has enough food for 150 students for 6 days. How long will the food last if 50 students were shifted to another camp?
a) 10days b) 4 days c) 3 days d) 9 days

INTERNATIONAL INDIAN SCHOOL DAMMAM
MIDDLE SECTION
GRADE 8
CH.12 FACTORISATION WORKSHEET (2025-26)

1. Which of the following is the common factor of $21x^2y$ and $35xy^2$?
(i) 7 (ii) xy (iii) $7xy$ (iv) none of these.
2. Which of the following are the factors of $1 - x^2$?
(i) $(x + 1)(x - 1)$ (ii) $(1 - x)(1 + x)$
(iii) $(1 - x)(1 - x)$ (iv) $(1 + x)(1 + x)$.
3. Which of the following is the quotient obtained on dividing $-18xyz^2$ by $-3xz$?
(i) $6yz$ (ii) $-6yz$ (iii) $6xy^2$ (iv) $6xy$
4. Which of the following are the factors of $a^2 + ab + bc + ca$?
(i) $(b + c)(c + a)$ (ii) $(a + b)(a + c)$
(iii) $a(a + b + c)$ (iv) $(a + b)(b + c)$.
5. When we factorise $x^2 + 5x + 6$, then we get:
(i). $(x + 2)(x + 3)$ (ii). $(x - 2)(x - 3)$
(iii) $(x \times 2) + (x \times 3)$ (iv) $(x \times 2) - (x \times 3)$
6. $(y - x)(y + x)$ is equal to which of the following:
(i) $y^2 - yx$ (ii) $yx - x^2$ (iii) $y^2 - x^2$ (iv) $x^2 - y^2$
7. Factorize each of the following algebraic expressions:
 - i). $4x^2 + 12xy + 9y^2$
 - ii). $a^2 + 2ab + b^2 - 16$
 - iii). $x^2 + 2x + 1 - 9y^2$
 - iv). $a^2 + 3a - 88$
 - v). $27x^2 - 12y^2$
 - vi) $p^4 - (p - q)^4$
8. Factorise the given expressions and divide that as indicated.
 - i) $(4x^2 - 100) \div 6(x + 5)$
 - ii) $44(x^4 - 5x^3 - 24x^2)$ by $11x(x - 8)$
 - iii) $z(5z^2 - 80)$ by $5z(z + 4)$
 - iv) $24(x^2yz + xy^2z + xyz^2)$ by $8xyz$
 - v) $(a^3 + a - 3a^2 - 3)$ by $(a - 3)$
9. Assertion (A) –The common factor of x^2y^2 and x^3y^3 is x^2y^2
Reasons (R) –The factorisation is defined as expressing or decomposing a number or an algebraic expression as a product of its prime factors or irreducible factors.
 - a) Both A and R are true, and R is the correct explanation of A
 - b) Both A and R are true, but R is not the correct explanation of A
 - c) A is true but R is false
 - d) A is false but R is true
10. Assertion (A) –The factorisation of $6x - 42$ is $6(x + 7)$
Reasons (R) –The factorisation is defined as expressing or decomposing a number or an algebraic expression as a product of its prime factors or irreducible factors.
 - a) Both A and R are true, and R is the correct explanation of A
 - b) Both A and R are true, but R is not the correct explanation of A
 - c) A is true but R is false
 - d) A is false but R is true

CASE STUDY

11. The school garden



The Student Council of a school is planning to design a rectangular herbal garden in a space behind The school building.

The area available for the garden is represented by the algebraic expression: $(x^2 + 7x + 12)$ square meters.

- (i) Find the factors of the expression: $x^2 + 7x + 12$
- (ii) Determine the expressions for the length and width of the garden.
- (iii) If $(x=5)$, what are the actual length and width of the garden?

12. A school's management has allocated an amount represented by the expression $(4x^4 - 64)$ for a new project. They want to divide this amount equally among several students, each receiving a share represented by the expression $4(x^2 + 4)$



- (i) Factorise the total amount.
- (ii) Find an expression for the number of students who will receive a share.
- (iii) If the value of $x = 3$, find the number of students?

INTERNATIONAL INDIAN SCHOOL, DAMMAM

VISION MIDDLE SECTION

GRADE 8

CH-13 INTRODUCTION TO GRAPH (2025-26)

CHOOSE THE CORRECT ANSWER

- 1) In a situation where you are buying petrol at a gas station, which of the following is the independent variable?
(a) The total cost you pay (b) The number of liters of petrol you fill.
(c) The distance the car will travel later.(d) The time it takes to fill the tank.
- 2) A graph that displays data that changes continuously over periods of time is
(a) Bar graph (b) pie chart (c) histogram (d) line graph
- 3) A line graph which is whole unbroken line is called a
a) Linear graph b) pie chart c) double bar graph d) histogram
- 4) ASSERTION: In a distance-time graph, "Time" is considered the independent variable and is plotted on the x-axis.

REASON: A dependent variable is one whose value changes based on the value of another variable.

- (a)Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c)A is true but R is false.
(d)A is false but R is true.

Answer the following questions

- 5) Draw the graph for the following table of values. Is it a linear graph?

No of Oranges	1	2	3	4	5	6
Cost(inRs)	3	6	9	12	15	18

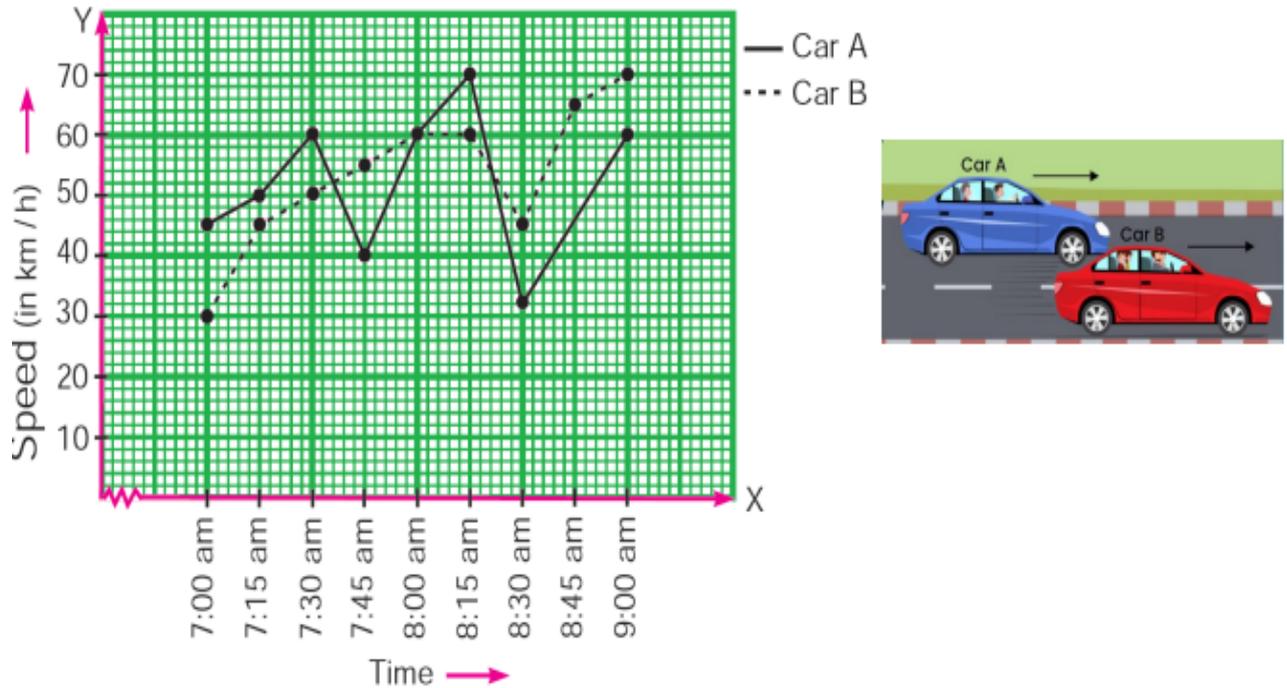
- 6) Draw a linear graph based on the relationship between the number of notebooks and their total cost shown in the table.

No of Notebooks	2	4	6	8	10	12
Cost(inRs)	50	100	150	200	250	300

What is the cost of 9 Note books ?

7)

The given graph shows the Speed-Time graph for car A and car B. Read the graph and answer the following questions.



- What is the difference in the initial speeds of car A and car B?
- At what time is the speed of car A the maximum?
- What is the difference in the speed of car B at 7 am and 9 am?
- For how long does car B move at constant speed?

8) The given graph shows number of magazines sold in the 5 days of a week. Read the graph carefully and answer the given questions



- How many magazines were sold on Monday?
- How many magazines were sold on Wednesday?
- On which day was the highest number of magazines sold?
- On which day was the least number of magazines sold?

