2. A man sells an almirah for ₹3150 making a profit of 5%. What would have been his gain per cent, if he had sold the almirah for ₹3500?

3. The marked price of a vacuum cleaner is 20% more than the cost price. It is sold at a discount of 7%. If the marked price is ₹8000, then find the selling price, profit and profit percentage.

4. In a village, there was an epidemic and the population decreased by 10%. If there were only 1800 people left in the village, what was the original population of the village?

5. Rajeev bought a second hand bike for ₹50,000. He spent ₹5000 on repairing it. He then sold the bike for 12% profit. How much was the selling price of the bike?

6. Mohini buys some clothes from a shop at a discount of 15%. The marked price for the dress was ₹3000, the sari was ₹2500 and the pair of jeans was ₹1000. What did she pay in all after the discount?

7. Riyaz bought a TV set marked at ₹30,000. He got a discount of 10% and paid a GST of 12%. How much did Riyaz pay for the TV set?

8. Calculate the amount and the compound interest:

a) on ₹7,50,000 for 3 years at the rate of 11% p.a. compounded annually.

b) on ₹34,000 for 2 years at the rate of 4.5% p.a. compounded annually.

c) on ₹5000 for 1 year at the rate of 6% p.a. compounded half-yearly.

d) on ₹10,000 for 1.5 years at the rate of 4% p.a. compounded half-yearly.

9. Kabir takes a loan of ₹70,000 from Indu at a rate of 2.5% p.a. for 2 years compounded annually. Find the amount he has to return.

10. A man deposited ₹40,000 at a rate of 12% p.a. compounded half-yearly for 1.5 years in a bank. Calculate the compound interest at maturity.

11. Deepak lends ₹10,00,000 at 10% p.a. for 2 years compounded annually. Raj lends the same amount at the same rate of interest for the same time but interest to be compounded half-yearly. Who will gain more interest and by how much?

12. Find the difference between the CI and the SI on ₹3,50,000 for 2 years at 13% p.a. compounded annually.

13. Find the time required for ₹650 to become ₹676 at the rate of 4% p.a. compounded annually.

14. What sum of money will amount to ₹8,718.05 at the rate of 10% p.a. compounded annually in 3 years?

15. The population of a city increases at a rate of 9% every year. What was the population of the city 2 years ago, if its present population is approximately 28,00,000?

16. A businessman invested a principal of ₹6,00,000. He had a profit of 6% in the 1st year which rose to 8% in the 2nd year. He thereafter incurred a loss of 10%. Find the total profit of the businessman after 3 years.

4. The opposite angles of a parallelogram are given as $(5x + 3)°$ and $(4x + 6)°$. Find the measure of all the angles.

5. The angles of a quadrilateral are $(2x + 4)°$, $(2x - 1)°$, $(2x + 5)°$ and $2(3x + 2)°$, respectively. Find the value of $x$.

6. The lengths of the two adjacent sides of a parallelogram are $3x$ and $5x$. Its perimeter is 480 cm. Find the value of $x$.

7. The four angles of a quadrilateral are in the ratio 4 : 5 : 6 : 9. Find out the measures of all the angles.

8. A parallelogram ABCD is shown in Fig. 11.34. Find the values of $x$, $y$ and $z$.

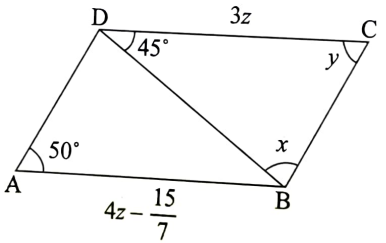


**Fig. 11.34**

9. PQRS is a parallelogram in which a pair of adjacent angles are in the ratio 1: 2. Find the measure of all the angles.

10. The diagonals of a rhombus are 10 cm and 26 cm, respectively. Find the length of one side of the rhombus.

11. In a parallelogram ABCD, AB = $(x + 7)$ cm and CD = $(2x - 5)$ cm. Find the length of AB.

12. ABCD is a trapezium in which AB is parallel to CD. If $\angle A = \angle B = 45°$, then find the measures of $\angle C$ and $\angle D$.

13. Two adjacent angles of a rhombus are in the ratio 2 : 3. Find the angles of the rhombus.

14. In a trapezium ABCD, $\angle A : \angle D = 7 : 2$ and $\angle B : \angle C = 4 : 5$. Find the measures of the angles of the trapezium.

15. ABCD is a rectangle in which O is the point of intersection of the diagonals. Also, O is equidistant from A, B and C. Is this true? Explain.

# Workout

1. Choose the correct option.

a) The HCF of $8xy$ and $16x^2$ is:

i. $8x$ ii. $4x$ iii. $8x^2$ iv. $4x^2$

b) The HCF of $3x^2y^2$ and $2xy$ is:

i. $x^2\,y^2$ ii. $xy$ iii. $2xy$ iv. $3x$

c) The reduced form of $(36x^2 - 81y^2)$ is:

i. $(6x + 9y)(6x - 9y)$

ii. $(6x + 9y)(4x - 5)$

iii. $(9x + 6y)(9x - 6y)$

iv. $(9y - 6x)(9y + 6x)$

d) $xy + x + y + 1$ is equivalent to:

i. $(x + 1)(y + 1)$ ii. $x(y - 1)^2$

iii. $y(x + 1)$ iv. $(x + y)^2$

e) Factors of $(x^2 + 3x + 2)$ are:

i. $(x + 2)$ and $(x - 1)$

ii. $(x + 2)$ and $(x + 1)$

iii. $(x-2)$ and $(x+1)$

iv. $(x-2)$ and $(x-1)$

2. Find the common factors and HCF of the following monomials.

a) $3x^2y$ and $18xy$ b) $24xyz$ and $4x^2y^2$

c) $45x^3y^3$ and $35x^2y^2$ d) $12xyz$ and $64x^2y$

3. Factorise the following polynomials.

a) $12xy^2z + 64x^2yz$ b) $78x^3y^3 - 13xy^3$

c) $25x^3yz^3 + 5xyz$ d) $72x^3y^4z^2 + 96xy^3z^2$

4. Factorise the following by using the identities or regrouping the terms.

a) $2x^2 - 32x + 128$ b) $3x^2 + 18x + 27$

c) $12x^3y^2 + 24x^2y^2$ d) $36x^3y^2z^2 + 48x^2y^3z$

e) $x^2 + 7x + 12$ f) $8x^3 - 343$

g) $x^2 - 2xy + y^2 - x + y$

h) $x^4 + 22x^3 + 121x^2$

i) $a^2 + b^2 - 2(ab - ac + bc)$

5. Factorise the following by any method.

a) $a^2b^3c^3 - abc^2$ b) $49a^2b^4 - 7abc$

c) $16a^2 - 144b^2$ d) $64a^2 - 64a + 16$

6. Factorise the following by splitting the middle term.

a) $a^2 + 15a + 26$ b) $x^2 + 9x + 20$

c) $z^2 + 18z + 65$ d) $p^2 + 14p + 13$

e) $s^2 + 4s - 21$ f) $y^2 - 2y - 15$

g) $z^2 + 11z + 18$ h) $b^2 - 10b + 21$

i) $p^2 - 17p - 60$ j) $b^2 + 4b - 77$

k) $q^2 + 7q + 12$ l) $z^2 - 13z - 30$

m) $a^2 - 16a - 80$

## Subject Enrichment