Carmel International School, Hosur

Grade :8   **SUB: Mathematics**

WORKSHEET

1. The sum of the rational numbers – 8/19 and -4/57 ?

2. What number should be added to 3/8 to get -1/24?

3. Which of the rational numbers 4/9, -5/6, -7/-12 and 11/-24 is the smallest?

4. Simplify: 2/3 + -4/5 + 7/15 + -11/20

    (a) -1/5   (b) -13/60   (c) -4/15   (d) – 7/30

5. What number should be subtracted from -3/4 so as to get 5/6?

    (a) -3/10   (b) -5/24   (c) -19/12   (d) 9/25

6.   Which of the following rational numbers is in the standard form?

    (a) -9/28   (b) -26/78   (c) –14/16   (d) 48/-96

7. The sum of two rational numbers is -7. If one of the numbers is –15/19, the other number is _____

    (a) -21/10   (b) -57/16   (c) 7/9   (d) -118/19

8.   Which of the following forms a pair of equivalent rational numbers?

    (a) 24/40 and 35/50   (b) -25/35 and 55/-77
    (c) -8/15 and -24/48   (d) 9/72 and -3/21

9.   The value of {-8/13 × 26/-3} is _____

    (a) -8/13   (b) -7/26   (c) -4/13   (d) 16/3

10. The reciprocal of a negative rational number _____

    (a) is a positive rational number (b) is a negative rational number

    (c) can be either a positive or a negative rational number (d) does not exist

11. The value of (- 16/21 ÷ -4/3) is _____

    (a) -3/10   (b) -7/21   (c) 4/7   (d) -7/6

12. Fill in the blanks: $5/12 \div (\underline{\hspace{1cm}}) = -35/18$

   (a) -21/36   (b) -12/19   (c) -5/18   (d) -3/14

13. The product of two numbers is -20/9. If one of the numbers is 4, find the other.

   (a) –5/9   (b) 3/11   (c) 12/39   (d) –9/11

CH- 2 EXPONENTS AND POWERS

1. Which of the following numbers is a perfect square?
   (a) 141   (b) 196   (c) 124   (d) 222

2. A perfect square number can never have the digit ...... at the units place.

   (a) 1   (b) 4   (c) 8   (d) 9

3. $\sqrt{5625} = ?$

   (a) 55   (b) 65   (c) 75   (d) 85

4. What least number must be added to 6072 to make it a perfect square?

   (a) 6   (b) 10   (c) 12   (d) 16

5. $\sqrt{0.9} = ?$

   (a) 0.3   (b) 0.03   (c) 0.33   (d) 0.94

6. $\sqrt{0.00059049}$ is equal to
   (a) 0.243   (b) 0.0243   (c) 0.00243   (d) 0.000243

7. $\sqrt{1.0816} = ?$
   (a) 1.04   (b) 1.286   (c) 0.904   (d) 1.35

8. $\sqrt{0.9} \times \sqrt{1.6} = ?$

   (a) 0.12   (b) 1.2   (c) 0.75   (d) 12

9. $\sqrt{288}/\sqrt{128} = ?$
   (a) $\sqrt{3}/2$ (b) $3/\sqrt{2}$ (c) $^3/_2$ (d) 1.49

10. $\sqrt{4\frac{57}{196}}?$

   (a) $2^1/_{14}$ (b) $2^3/_{14}$ (c) $2^5/_{14}$ (d) $2^9/_{14}$

11. Which of the following numbers is not a perfect cube?

   (a) 2197   (b) 512   (c) 2916   (d) 343

12. What least number must be multiplied to 6912 so that the product becomes a perfect cube?

   (a) 2   (b) 3   (c) 4   (d) 6

13. What is the least number by which 46305 must be divided so that the quotient is a perfect cube?

   (a) 2   (b) 3   (c) 5   (d) 6

14. $\sqrt[3]{5832} =?$

   (a) 22   (b) 18   (c) 16   (d) 14

15. Evaluate: $\sqrt[3]{[(-1728)/2744]}$

   (a) -6/11   (b) – 6/7   (c) -3/4   (d) -12/17

CH -3 PROFIT AND LOSS

1. A bat is bought for $ 120 and sold for $ 105. The loss percent is ……………. .

   (a) $12^1/_2$ %   (b) $14^1/_5$ %   (c) 15 %   (d) $16^2/_3$ %

2. A bookseller sold a book for $ 100 and thereby gains $ 20. Find his gain per cent.

   (a) 20 %   (b) 25 %   (c) 40 %   (d) none of these

3. By selling a calculator for $ 418a shopkeeper 10%. The cost price of the calculator is …………… .

   (a) $ 360.000   (b) $ 372.80   (c) $ 376.20   (d) $ 380.00

4. A shopkeeper sells one transistor for $ 840 at a gain of 20% and another for $ 960 at a loss of 4%. His total gain or loss percent is ……………… .

   (a) $5^{15}/_{17}$ % loss   (b) $5^{15}/_{17}$ % gain

   (c) $6^2/_3$ % loss   (d) $6^2/_3$ % gain

5. The CP of 21 articles is equal to SP of 18 articles. Find the gain or loss percent.

   (a) $12^1/_2$ % gain

   (b) $12^1/_2$ % loss

   (c) $16^2/_3$ % gain

   (d) $16^2/_3$ % loss

6. If by selling 110 mangoes, the CP of 120 mangoes is realized, the gain percent is

   ……………… .

   (a) $9^1/_{11}$ %

   (b) $9^1/_9$%

   (c) 1010111011%

   (d) $11^1/_9$ %

7. A vendor loses the selling price of 4 oranges on selling 36 oranges. His loss per cent is

   ………….. .

   (a) 10 %

   (b) $11^1/_9$ %

   (c) $12^1/_2$ %

   (d) none of these

8. A fruit seller buys lemons at 2 for a rupee and sells then at 5 for three rupees. His gain percent is

   a) 10%

   b) 15%

   c) 20%

   d) 25%

9. If selling price of 40 articles is equal to cost price of 50 articles, the loss or gain percent is

   a) 25% loss

   b) 20% loss

   c) 25% gain

   d) 20% gain

10. Two bicycles were sold for Rs. 3990 each, gaining 5% on one and losing 5% on the other. The gain or loss percent on the whole transaction is

    a) Neither gain nor loss

    b) 2.5% gain

    c) 2.5% loss

    d) 0.25% loss

Ch – 6 SIMPLE AND COMPOUND INTEREST

1. The compound interest on 1000 at 10% p.a. for 2 years is

   (a) 190

   (b) 210

   (c) 1210

   (d) 200

2. The compound interest on 5000 at 20% per annum for 112 years compounded half yearly is

   (a) 6655

   (b) 1655

   (c) 50

   (d) 1000

3. The time periods and rate for a sum taken at 8% p.a. for 112 years compounded half yearly are

   (a) n = 3, R = 4%   (b) n = 6, R = 2%

   (c) n = 3, R = 2%   (d) n = 6, R = 4%

4. If ₹12000 taken for 2 years at 4% per annum compounded quarterly, then time period and rate is

   (a) n = 2, R = 16%   (b) n = 4, R = 1 %

   (c) n = 8, R = 1%   (d) n = 8, R = 16%

5. The time in which ₹6000 amounts to ₹7986 at 10% p.a. compounded annually is

   (a) 2 years   (b) 3 years   (c) 4 years   (d) 5 years

6. **Value Based Question**

   A person wants to invest ₹ 100000 in fixed deposit scheme for 2 years. His financial advisor explained to him two types of schemes first is yielding 10% p.a. compounded annually, second is yielding 10% p.a. compounded semi-annually. Which scheme is better and why? Why investment is important for future life?

CH -7 DIRECT AND INDIRECT VARIATION

1. 10 metres of cloth cost Rs 1000. What will 4 metres cost ?

   (a) Rs 400   (b) Rs 800   (c) Rs 200   (d) Rs 100.

2. 15 books weigh 6 kg. What will 6 books weigh ?

   (a) 1.2 kg   (b) 2.4 kg   (c) 3.8 kg   (d) 3 kg

3. A horse eats 18 kg of com in 12 days ? How much does he eat in 9 days ?

   (a) 11.5 kg   (b) 12.5 kg   (c) 13.5 kg   (d) 14.5 kg.

4. 8 g of sandal wood cost Rs 40. What will 10 g cost ?

   (a) Rs 30   (b) Rs 36   (c) Rs 48   (d) Rs 50.

5. 20 trucks can hold 150 metric tonnes. How much will 12 trucks hold ?

   (a) 80 metric tonnes   (b) 90 metric tonnes

   (c) 60 metric tonnes   (d) 40 metric tonnes

6. 120 copies of a book cost Rs 600. What will 400 copies cost ?

   (a) Rs 1000   (b) Rs 2000   (c) Rs 3000   (d) Rs 2400.

7. The rent of 7 hectares is Rs 875. What is the rent of 16 hectares ?

   (a) Rs 2000   (b) Rs 1500   (c) Rs 1600   (d) Rs 1200.

8. A boy runs 1 km in 10 minutes. How long will he take to ran 600 m ?

   (a) 2 minutes   (b) 3 minutes   (c) 4 minutes

   (d) 6 minutes.

9. A shot travels 90 m in 1 second. How long will it take to go 225 m ?

   (a) 2 seconds   (b) 2.5 seconds   (c) 4 seconds   (d) 3.5 seconds.

10. 3 knives cost Rs 63. What will 17 knives cost ?

   (a) Rs 357   (b) Rs 375   (c) Rs 537   (d) Rs 573.

11. 15 men can mow 40 hectares of land in 1 day. How much will 6 men mow in 1 day ?

   (a) 16 hectares   (b) 12 hectares   (c) 20 hectares   (d) 24 hectares.

12. A man walks 20 km in 5 hours. How long would he take in walking 32 km ?

   (a) 3 hours   (b) 4 hours   (c) 6 hours   (d) 8 hours.

13. What is the cost of 50 sticks at Rs 24 per score ?

   (a) Rs 30   (b) Rs 40   (c) Rs 50   (d) Rs 60

14. A train travels 60 km in 1 hour. How long will it take to go 150 km ?

   (a) 2 hours   (b) 3 hours   (c) 2.5 hours   (d) 4 hours

15. If 3 quintals of coal cost Rs 6000, what is the cost of 120 kg ?

   (a) Rs 1200   (b) Rs 2400   (c) Rs 3600   (d) Rs 4800

16. If 20 cows eat as much as 15 oxen, how many cows will eat at much as 36 oxen ?

   (a) 40   (b) 44   (c) 45   (d) 48

17. The fare for a journey of 40 km is Rs 25. How much can be travelled for Rs40 ?

   (a) 32 km   (b) 64 km   (c) 50 km   (d) 60 km

18. Apala types 200 words in half an hour. How many words will she type in 12 minutes ?

   (a) 80   (b) 50   (c) 100   (d) 60.

19. A labourer is paid Rs 400 for 2 days work. If he works for 5 days, how much will he get ?

   (a) Rs 1000   (b) Rs 800   (c) Rs 750   (d) Rs 900.

20. A machine in a soft drink factory fills 600 bottles in 5 hours. How many bottles will it fill in 2 hours ?

    (a) 120   (b) 180   (c) 150   (d) 240.

21. If 8 men can do a piece of work in 20 days, in how many days could 20 men do the same work ?

    (a) 6 days   (b) 8 days   (c) 4 days   (d) 10 days.

22. If an amount of food last for 40 days for 120 men, how long will it last for 80 men at the same rate ?

    (a) 50 days   (b) 60 days   (c) 80 days   (d) 100 days

23. If 18 women can reap a field in 7 days, in what time can 6 women reap the same field ?

    (a) 15 days   (b) 21 days   (c) 30 days   (d) 36 days.

24. 10 men can dig a trench in 15 days. How long will 3 men take ?

    (a) 50 days   (b) 60 days   (c) 100 days   (d) 75 days

25. 3 lambs finish eating turnips in 8 days. In how many days will 2 lambs finish them ?

    (a) 6   (b) 8   (c) 10   (d) 12.

Ch – 9 BASIC OPERATIONS ON ALGEBRAIC EXPRESSIONS

1. An algebraic expression that contains only one term is called:

   a) Monomial   b) Binomial   c) Trinomial   d) None of the above

2. $5x+6y$ is a:

   a) Monomial   b) Binomial   c) Trinomial   d) None of the above

3. The algebraic expression $3x+2y+6$ is a:

   a) Monomial   b) Binomial   c) Trinomial   d) None of the above

4. A polynomial contains _____ number of terms:

   a) One   b) Two   c) Three   d) Any

5. In which of the following, the two expressions are like terms?

   a) 7x and 7y   b) 7x and 9x   c) 7x and $7x^2$ d) 7x and 7xy

6. If we add, $7xy + 5yz - 3zx$, $4yz + 9zx - 4y$ and $-3xz + 5x - 2xy$, then the answer is:

   a) $5xy + 9yz + 3zx + 5x - 4y$

   b) $5xy - 9yz + 3zx - 5x - 4y$

   c) $5xy + 10yz + 3zx + 15x - 4y$

   d) $5xy + 10yz + 3zx + 5x - 6y$

7. If we subtract $4a - 7ab + 3b + 12$ from $12a - 9ab + 5b - 3$, then the answer is:

   a) $8a+2ab+2b+15$

   b) $8a+2ab+2b-15$

   c) $8a-2ab+2b-15$

   d) $8a-2ab-2b-15$

8. If we multiply $5x$ and $(-4xyz)$, then we get:

   a) $20x^2yz$

   b) $-20x^2yz$

   c) x^2yz

   d) $-2xyz$

9. The product of $4x$ and 0 is:

   a) $4x$

   b) 4

   c) 0

   d) None of the above

10. The volume of a cuboid with length, breadth and height as $5x$, $3x^2$ and $7x^4$ respectively is:

   a) $105x^7$

   b) $105x^2$

   c) $105x^4$

   d) $105x$

11. The product of $5x$ and $3y$ is:

   a) xy

   b) $2xy$

   c) $5xy$

   d) $15xy$

12. The product of $6x$ and $-11x$ is:

   a) $66x^2$

   b) $-66x^2$

   c) x^2

   d) $-x^2$

13. The area of a rectangle whose length and breadth are $3y$ and $9y^2$ respectively is:

   a) $12y^3$

   b) $21y^3$

   c) $27y^3$

   d) y^3

14. The area of a rectangle that has length $= 2a^2b$ and breadth $= 3ab^2$ is:

   a) $6a^3b^3$

   b) a^3b^3

   c) $2a^3b^3$

   d) $4a^3b^3$

15. The side of a cube is $2a$. Find the volume of the cube.

   a) $4a^2$

   b) $2a$

   c) $8a^3$

   d) 8

16. Multiplication of monomials x^2, $(-x)^3$, $(-x)^4$ is equal to:

   a) x^9 b) x^5 c) x^7 d) x^6

17. The value of $(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ is:

   a) $x + y + z$ b) $x^2 + y^2 + z^2$ c) $xy + yz + zx$ d) 0

18. $(a - b)^2$ is equal to:

   a) $a^2 + b^2 - 2ab$ b) $a^2 + b^2 + 2ab$ c) $a^2 + b^2$ d) $2ab$

19. The product of $3xy^2z$ and $4x$ is:

   a) $12xyz$ b) $12xy^2$ c) $12x^2y^2z$ d) $12x^2yz$

20. Which of the following is a like term as $8xy$?

   a) 8   b) $8x$ c) $8y$ d) xy

CH- 10 SPECIAL PRODUCTS

1. Using identities evaluate 98^2

   (a) 99604   (b) 99607   (c) 99609   (d) 99611

2. Using $(x + a)(x + b) = x^2 + (a + b)x + ab$

   Find 6.2×6.3

   (a) 3.906   (b) 39.6   (c) 39.0   (d) 0.396

3. Simplify $(xy + yz)^2 - 2xy^2z$

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

4. $(x - y)(x + y) + (y - z)(y + z) + (z - x)(z + x)$ is equal to

   (a) 0   (b) $x^2 + y^2 + z^2$ (c) $xy + yz + zx$ (d) $x + y + z$.

5. $(a + b)^2$ is equal to

   (a) $a^2 + b^2 - 2ab$ (b) $a^2 + b^2 + 2ab$ (c) $a^2 + b^2$ (d) $2ab$.

6. $(a - b)^2$ is equal to

   (a) $a^2 + b^2 - 2ab$ (b) $a^2 + b^2 + 2ab$ (c) $a^2 + b^2$ (d) $2ab$.

7. $a^2 - b^2$ is equal to

   (a) $2ab$ (b) $-2ab$ (c) $(a + b)(a - b)$ (d) ab