Carmel International School, Hosur

Grade :VII **SUB: Mathematics**

Worksheet

CH -1 INTEGERS

1. Fill in the blanks using < or >.
   (a) -3 …… -4 (b) 6 ……. -20
   (c) -8 …… -2 (d) 5 …… -7
2. Solve the following:
   (i) (-8) × (-5) + (-6) (ii) [(-6) × (-3)] + (-4)
   (iii) (-10) × [(-13) + (-10)] (iv) (-5) × [(-6) + 5]
3. Using number line, find:
   (i) 3 × (-5) (ii) 8 × (-2)
4. The sum of two integers is 116. If one of them is -79, find the other integers
5. If a = -35, b = 10 cm and c = -5, verify that:
   (i) a + (b + c) = (a + b) + c (ii) a × (b + c) = a × b + a × c

CH- 2 RATIONAL NUMBERS

1. The numerator of the rational number 0 is
2. The denominator of the rational number 0 is
3. The denominator of the rational number 8 is
4. If 3/4 = ?/12, then ?
5. Which of the following is negative rational number :
   a) ½ b) ¾ c) -4/-5 d) 2/-3
6. Which of the following rational numbers is not to equivalent to 3/5 ?
   a) 6/10 b) -3/-5 c) 9/15 d) 12/24
7. The reciprocal of −2/ 5 is
8. The sum of 5/4 +(-25/4)
9. Solve 2/-5 x -5/2
10. Solve -6/5 +1 =
11. Reduce the following rational numbers in standard form
    i) 35/-15 ii) -36/-216
12. If the product of two rational numbers is −9/16 and one of them is −4/15, find the other number.
13. Insert five rational numbers between i) -2/3 and -1 ii) -1/2 and -3/2

CH- 3 FRACTION

1. 1-1/5 is equal to
2. ½+1/3 is equal to
3. Apala ate 35 of an orange. The remaining orange was eaten by Meenu. What part of the orange was eaten by Meenu?
4. Find 78.5 ÷ 0.5?
5. Find 58.3×1000?

6. Express as rupees using decimals 9 rupees 50 paise.
7. Find 16/7 ÷ 4/7
8. Find 1/4 of 220.
9. Find the equivalent fraction of 4/5.
10. Solve 9/13 + 5/13.

CH – 4 EXPONENTS

1. The exponential form of 100000 is
2. The exponential form of 81 is
3. The exponential form of 243 is
4. The value of $(-2)^3$ is
5. What is the base in 8^2?
6. $(-1)^{\text{even number}}$ =
7. $(-1)^{\text{odd number}}$ =
8. If $2^3 \times 2^4 = 2^?$, then ? =
9. $2^7 \div 2^3$ =
10. If a is any non-zero integer, then a^0 =
11. $3^0 + 4^0 + 5^0$ =
12. Which of the following is true?

(a) $2^0 = (100)^0$ (b) $10^2 \times 10^8 = 10^{16}$
(c) $2^2 \times 3^3 = 65$ (d) $2^3 > 3^2$

CH- 5 SETS

1. Write an example of a finite and infinite set in set builder form.
2. Write an example of equal sets.
3. If set A = {1, 3, 5}, B = {2, 4, 6} and C = {0, 2, 4, 6, 8}. Then write the universal set for all three sets.
4. Find the cardinal number of the following sets.

(a) A = {x : x ∈ I, 2 < x < 7} (b) B = {x : n ∈ N, x = n2, n < 3}
(c) The set of months in a year (d) C = {x : x ∈ Z+, x < 100}
(e) The set of letters in the word MALAYALAM. (f) D = {x : x = n, n ∈ W, n < 5}

5. Are the following pairs of sets equal?

(a) A = {2} B = {x : x ∈ N, x is an even prime number}.
(b) P = {1, 4, 9} Q = {x : x = n2, n ∈ N, n ≤ 3)
(c) X = {x : x ∈ W, x < 5} Y = {x : x ∈ N, x ≤ 5}
(d) M = {a, b, c, d} N = {p, q, r, s}
(e) D = {x : x is a multiple of 30} E = {x : x is a factor of 10}

6. Which of the following are equivalent sets?

(a) A = {1, 2, 3} B = {4, 5}
(b) P = {q, s, m} Q = {6, 9, 12}
(c) X = {x : x is a prime number less than 10} Y = {x : x ∈ N, x ≤ 4}
(d) R = {x : x = 2n + 3, n < 4, n ∈ N} S = {x : x = n/(n + 1), n ∈ R, n ≤ 4}

(e) The set of vowels in the English alphabet
(f) The set of consonants in the English alphabet

CH- 6 RATIO AND PROPORTION

1. A ratio equivalent to 3 : 7 is:

   (i) 3 : 9; (ii) 6 : 10; iii) 9 : 21; (iv) 18 : 49

2. The ratio 35 : 84 in simplest form is:

   (i) 5 : 7; (ii) 7 : 12; (iii) 5 : 12; (iv) none of these

3. In a class there are 20 boys and 15 girls. The ratio of boys to girls is:

   (i) 4 : 3; (ii) 3 : 4; (iii) 4 : 5; (iv) none of these

4. Two numbers are in the ratio 7 : 9. If the sum of the numbers is 112, then the larger number is:

   (i) 49; (ii) 72; (iii) 63; (iv) 42

5. The ratio of 1.5 m to 10 cm is:

   (i) 1 : 15; (ii) 15 : 10; (iii) 10 : 15; (iv) 15 : 1

6. The ratio of 1 hour to 300 seconds is:

   (i) 1 : 12; (ii) 12 : 1; (iii) 1 : 5; (iv) 5 : 1

7. In 4 : 7 : : 16 : 28, 7 and 16 are called

   (i) extreme terms; (ii) middle terms;
   (iii) b middle and c extreme term; (iv) none of these

8. The first, second and fourth terms of a proportion are 16, 24 and 54 respectively. Then the third term is:

   (i) 36; (ii) 28; (iii) 48; (iv) 32

9. If 12, 21, 72, 126 are in proportion, then:

   (i) $12 \times 21 = 72 \times 126$; (ii) $12 \times 72 = 21 \times 126$;

   (iii) $12 \times 126 = 21 \times 72$; (iv) none

10. If x, y and z are in proportion, then:

   (i) x : y : : z : x; (ii) x : y : : y : z;

   iii) x : y : : z : y; (iv) x : z : : y : z

11.7 : 12 is equivalent to:

(i) 28 : 40; (ii) 42 : 71; iii) 72 : 42; (iv) 42 : 72

12.The length and breadth of a rectangle are in the ratio 3 : 1. If the breadth is 7 cm, then the length of the rectangle is:

(i) 14 cm; (ii) 16 cm; (iii) 18 cm; (iv) 21 cm

13.The value of m, if 3, 18, m, 42 are in proportion is:

(i) 6; (ii) 54; (iii) 7; (iv) none of these

14.Length and width of a field are in the ratio 5 : 3. If the width of the field is 42 m then its length is:

(i) 100 m; (ii) 80 m; (iii) 50 m; (iv) 70 m

CH- 7 PERCENTAGE

1. Convert the following fraction into percentage with denominator 100:

   a) 6/9 b) 25/8 c) 15/5

2. Convert the decimals into percent:

   a) 1.50 b) 15.79 c) 19.87

3. Convert the following into percent multiple by 100:

   a) 13/26 b) 3/9 c) 525/25

4. Find the following:

   a) 10% of 50 b) 80% of 80 c) 16% of 48 d) 56% of 79

5. Convert the following percent into fraction in the lowest form:

   a) 195% b) 26% c) 83% d) 67%

6. Find the percentage:

   a) 30% of 560 b) 19% of 689 c) 93% of 278

7. Convert the following percent into fraction in the lowest form:

   a) 55 9/3% b) 38 11/33% c) 79 26/13%

8. Find the following :

   a) 33% of 60 L of water b) 53% of 20 kg of wheat

   c) 13% of 113 kg of rice

9. Convert the percentage into fraction:

   a) 60% b) 73% c) 62%

CH -8 PROFIT AND LOSS

1. An article is purchased for Rs. 450 and sold for Rs. 500. Find the gain percent.
2. A man sold a fan for Rs. 465. Find the cost price if he incurred a loss of 7%.
3. Find the SP when:

   (i) CP = Rs 950, gain = 6% (ii) CP = Rs 1540, loss = 4%
4. Find the gain or loss per cent when:

   (i) CP = Rs 2400 and SP = Rs 2592

   (ii) CP = Rs 1650 and SP = Rs 1452

   (iii) CP = Rs 12000 and SP = Rs 12800

   (iv) CP = Rs 1800 and SP = Rs 1611

CH- 9 SIMPLE INTEREST

1. Find the simple interest, when:

   (i) Principal = Rs 2000, Rate of Interest = 5% per annum and Time = 5 years.

   (ii) Principal = Rs 500, Rate of Interest = 12.5% per annum and Time = 4 years.
2. Find the interest on Rs 500 for a period of 4 years at the rate of 8% per annum. Also, find the amount to be paid at the end of the period.
3. A sum of Rs 400 is lent at the rate of 5% per annum. Find the interest at the end of 2 years.
4. A sum of Rs 400 is lent for 3 years at the rate of 6% per annum. Find the interest.
5. A man borrowed Rs 8000 from a bank at 8% per annum. Find the amount he has to pay after 9/2 years.