EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Simplification of Algebraic Fractions

Grade : ICSE Grade VIII

1. Simplify $\frac{(x^3+17x^2+72x)}{(x^3+7x^2-64x-448)}$

(i) $\frac{(3x^2+9x)}{(-2x^2-x-56)}$ (ii) $\frac{(-x^2+9x)}{(x^2-x+56)}$ (iii) $\frac{(x^2+9x)}{(x^2-x+56)}$ (iv) $\frac{(x^2+9x)}{(x^2-x-56)}$ (v) $\frac{(2x^2+9x)}{(x^2-x+56)}$

2. Simplify $\frac{(x+y)}{(x^2-xy)} \div \frac{(x^2+xy)}{(x-y)}$

(i) $\frac{3}{(-x^2)}$ (ii) $\frac{1}{(-x^2)}$ (iii) $\frac{4}{x^2}$ (iv) $\frac{1}{x^2}$ (v) $\frac{2}{x^2}$

3. Simplify $\frac{(25x^2-4)}{(25x^2-36)} \times \frac{(5x-6)}{(5x-2)}$

(i) $\frac{(5x+2)}{(5x-6)}$ (ii) $\frac{(5x-2)}{(5x-6)}$ (iii) $\frac{(5x+2)}{(5x+6)}$ (iv) $\frac{(6x+2)}{(5x-6)}$ (v) $\frac{(8x+2)}{(3x+6)}$

4. Which of the following gives the L.C.M. of two or more polynomials?

(i) (L.C.M. of numerical coefficients) × (Each common factor raised to the lowest power)

(ii) (Product of numerical coefficients) × (Each common factor raised to the highest power)

(iii) (Product of numerical coefficients) × (Each common factor raised to the lowest power)

(iv) (L.C.M. of numerical coefficients) × (Each common factor raised to the highest power)

5. Simplify $\frac{(8x^2+10x-12)}{(4x^2+24x+32)}$

(i) $\frac{(4x-3)}{(2x-8)}$ (ii) $\frac{(4x+3)}{(2x-8)}$ (iii) $\frac{(4x-3)}{(2x+8)}$ (iv) $\frac{(5x-3)}{(2x-8)}$ (v) $\frac{(7x-3)}{(-x+8)}$

6. Simplify $\frac{(x^2+15x+56)}{(x^2+7x)} \times \frac{(x^3-64x)}{(x^2-64)}$

(i) $(2x+8)$ (ii) $(x+8)$ (iii) $(x-8)$ (iv) $(-2x+8)$ (v) $(4x+8)$

7. Simplify $\frac{(x^2-3x-4)}{(x^2-9x+20)} \times \frac{(x^2-6x+5)}{(x^2+3x-4)}$

(i) $\frac{(2x+1)}{(x-4)}$ (ii) $\frac{(x+1)}{(x+4)}$ (iii) $\frac{(x-1)}{(x-4)}$ (iv) $\frac{(x+1)}{(x-4)}$ (v) $\frac{(4x+1)}{(-x+4)}$

8. Simplify $\frac{(x^2-5x)}{(4x-2y)} \div \frac{(x^2-25)}{(16x^2-4y^2)}$

(i) $\frac{(-4x^2+2xy)}{(x-5)}$ (ii) $\frac{(5x^2+2xy)}{(x+5)}$ (iii) $\frac{(4x^2+2xy)}{(x+5)}$ (iv) $\frac{(4x^2+5xy)}{(x+5)}$ (v) $\frac{(4x^2+2xy)}{(x-5)}$

9. Simplify $\frac{(x+7)}{(x^2-49)} + \frac{(3x+1)}{(3x^2+22x+7)} - \frac{(4x+4)}{(x^2-49)}$

(i) $\frac{(-4)}{(-2x^2-49)}$ (ii) $\frac{(-2x-4)}{(x^2+49)}$ (iii) $\frac{(-2x+4)}{(x^2+49)}$ (iv) $\frac{(-x-4)}{(x^2+49)}$ (v) $\frac{(-2x-4)}{(x^2-49)}$

10. Simplify $\frac{1}{(x^2-4x-5)} + \frac{1}{(x^2+8x+7)} + \frac{2}{(x^2-7x+10)}$

(i) $\frac{(5x+10)}{(x^3-39x-70)}$ (ii) $\frac{(4x-10)}{(x^3-39x-70)}$ (iii) $\frac{(7x+10)}{(-x^3-39x+70)}$ (iv) $\frac{(4x+10)}{(x^3-39x-70)}$ (v) $\frac{(4x+10)}{(x^3-39x+70)}$

11. Simplify $\frac{(x^2-x)}{(x^2-1)}$

(i) $\frac{(-x)}{(x-1)}$ (ii) $\frac{x}{(x+1)}$ (iii) $\frac{x}{(x-1)}$ (iv) $\frac{4x}{(-x+1)}$ (v) $\frac{2x}{(x-1)}$

12. Simplify $\frac{(a^2-16b^2)}{(a^2-25b^2)} \times \frac{(a+5b)}{(a+4b)}$

(i) $\frac{(2a-4b)}{(a-5b)}$ (ii) $\frac{(a-4b)}{(a-5b)}$ (iii) $\frac{(a-2b)}{(a-5b)}$ (iv) $\frac{(a-4b)}{(-a-5b)}$ (v) $\frac{(-a-4b)}{(-a-5b)}$

13. Find the L.C.M. of $6x^3yz$ and $18x^3yz^3$

(i) $18x^4yz^3$ (ii) $6x^3yz$ (iii) $18x^3y^3z^3$ (iv) $18x^3yz^3$ (v) $108x^6y^2z^4$

14. Simplify $\frac{(x^2-12x+35)}{(x^2-25)} \div \frac{(x^2+17x+72)}{(x^2+14x+45)}$

(i) $\frac{(x-7)}{(x+8)}$ (ii) $\frac{(x+7)}{(x-8)}$ (iii) $\frac{(2x-7)}{(x-8)}$ (iv) $\frac{(4x-7)}{(-x+8)}$ (v) $\frac{(x-7)}{(x-8)}$

15. Simplify $\frac{(25x^2+50x+9)}{(5x+9)}$

(i) $(8x+1)$ (ii) $(6x+1)$ (iii) $(5x-1)$ (iv) $(5x+1)$ (v) $(2x+1)$

16. Find the L.C.M. of $(30x^2+49xy+20y^2)$ and $(6x^2+41xy+30y^2)$

(i) $(x+6y)(5x+4y)(3x+7y)$ (ii) $(6x+5y)(x+6y)(3x+7y)$ (iii) $(5x+4y)(6x+5y)(9x+7y)$

(iv) $(5x+4y)(6x+5y)(3x+7y)$ (v) $(5x+4y)(6x+5y)(x+6y)$

17. Simplify $\frac{1}{(x^2+7x+6)}+\frac{1}{(x^2-36)}$

(i) $\frac{(2x-5)}{(x^3+x^2-36x+36)}$ (ii) $\frac{(3x-5)}{(x^3+x^2-36x+36)}$ (iii) $\frac{(5x-5)}{(-2x^3+x^2-36x-36)}$ (iv) $\frac{(2x-5)}{(x^3+x^2-36x-36)}$

(v) $\frac{(2x+5)}{(x^3+x^2-36x+36)}$

18. Simplify $\frac{(x^2-16y^2)}{(x^2-4y^2)}\times\frac{(x-2y)}{(x-4y)}$

(i) $\frac{(2x+4y)}{(x+2y)}$ (ii) $\frac{(x+4y)}{(-x+2y)}$ (iii) $\frac{(x+4y)}{(x+2y)}$ (iv) $\frac{(x+6y)}{(x+2y)}$ (v) $\frac{(-x+4y)}{(-x+2y)}$

19. Find the H.C.F. of (x^2-6x+5) and (x^2-8x+7)

(i) $(2x-1)$ (ii) $(x-7)$ (iii) $(x-1)$ (iv) $(2x-5)$ (v) $(x-5)$

20. Simplify $\frac{(x^2-6x-7)}{(x^2-14x+49)}$

(i) $\frac{(x-1)}{(x+7)}$ (ii) $\frac{(2x+1)}{(x+7)}$ (iii) $\frac{(x+1)}{(x-7)}$ (iv) $\frac{(x+1)}{(x+7)}$ (v) $\frac{(4x+1)}{(-2x-7)}$

21. Simplify $\frac{(81x^5-81x)}{(27x^3+27x^2+27x+27)}$

(i) $(3x)(x-1)$ (ii) $(-6x)(x+1)$ (iii) $(6x)(x+1)$ (iv) $(3x)(x+1)$

22. Simplify $\frac{(x^2-2x-15)}{(x^2+5x+6)}$

(i) $\frac{(4x-5)}{(-2x+2)}$ (ii) $\frac{(2x-5)}{(x-2)}$ (iii) $\frac{(x-5)}{(x-2)}$ (iv) $\frac{(x-5)}{(x+2)}$ (v) $\frac{(x+5)}{(x-2)}$

23. Find the H.C.F. of $170x^3y$ and $50x^3y^3$

(i) $10x^3y$ (ii) $10x^4y$ (iii) $10x^6y$ (iv) $10x^3y^3$ (v) $850x^3y^3$

24. Simplify $\frac{1}{(a-b)}-\frac{1}{(a+b)}+\frac{2a}{(a^2-b^2)}$

(i) $\frac{5}{(a-b)}$ (ii) $\frac{2}{(-a-b)}$ (iii) $\frac{2}{(a-b)}$ (iv) $\frac{4}{(-a-b)}$ (v) $\frac{3}{(a-b)}$

25. Simplify $\frac{(3x-1)}{2x}+\frac{(2x+1)}{4x}$

(i) $\frac{(16x+1)}{8x}$ (ii) $\frac{(17x-2)}{8x}$ (iii) $\frac{(8x-1)}{(-4x)}$ (iv) $\frac{(8x+1)}{(-4x)}$ (v) $\frac{(16x-2)}{8x}$

Assignment Key

1) (iv)	2) (iv)	3) (iii)	4) (iv)	5) (iii)	6) (ii)
7) (ii)	8) (iii)	9) (v)	10) (v)	11) (ii)	12) (ii)
13) (iv)	14) (i)	15) (iv)	16) (v)	17) (iv)	18) (iii)
19) (iii)	20) (iii)	21) (i)	22) (iv)	23) (i)	24) (iii)
25) (v)					