EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Special Products and Expansions

Grade : ICSE Grade VIII

1. If $\left(x^2+\frac{1}{x^2}\right)=6$, find the value of $\left(x-\frac{1}{x}\right)$

   (i) 4 (ii) 1 (iii) -1 (iv) 3 (v) 2

2. $(-5a+5b)(25a^2+25ab+25b^2)$

   (i) $(-125a^3+123b^3)$ (ii) $(-126a^3+125b^3)$ (iii) $(-125a^3+127b^3)$ (iv) $(-125a^3+125b^3)$

   (v) $(-124a^3+125b^3)$

3. $(a+b+c)(a^2-ab-ac+b^2-bc+c^2)$

   (i) $(a^3-3abc+b^3+c^3)$ (ii) $(a^3-6abc+b^3+c^3)$ (iii) $(2a^3-3abc+b^3+c^3)$ (iv) $(a^3+b^3+c^3)$

   (v) $(-3abc+b^3+c^3)$

4. Expand $\left(x-1\right)\left(x+1\right)\left(x^2+1\right)$

   (i) $x^5+x^4+x^3+x^2$ (ii) $3x^5+6x^3+3x^4+6x^2+3x+3$ (iii) x^4-1 (iv) $-2x^3-2x$

5. $(a-3b)(a^2+3ab+9b^2)$

   (i) (a^3-30b^3) (ii) $(2a^3-27b^3)$ (iii) $(-27b^3)$ (iv) (a^3-27b^3) (v) (a^3-24b^3)

6. If $(a+b)=10$, $ab=24$, find (a^3+b^3)

   (i) 281 (ii) 280 (iii) 283 (iv) 279 (v) 277

7. If $(a^2-b^2)=16$, $ab=15$, find $(a-b)$

   (i) 1 (ii) -1 (iii) 4 (iv) 2 (v) 3

8. If $\left(x^4+\frac{1}{x^4}\right)=2$, find the value of $\left(x+\frac{1}{x}\right)$

   (i) 0 (ii) 1 (iii) 5 (iv) 3 (v) 2

9. $(\frac{3}{2}a-\frac{2}{3}b)(\frac{3}{2}a+\frac{2}{3}b)$

   (i) $(\frac{9}{4}a^2-\frac{2}{3}b^2)$ (ii) $(\frac{9}{4}a^2-\frac{2}{9}b^2)$ (iii) $(\frac{9}{4}a^2-\frac{4}{9}b^2)$ (iv) $(\frac{13}{6}a^2-\frac{4}{9}b^2)$ (v) $(\frac{5}{2}a^2-\frac{4}{9}b^2)$

10. Evaluate $\left(k^2+l^2\right)\left(k^4-k^2l^2+l^4\right)=$

(i) $k^6+2l^2k^4+2l^4k^2+l^6$ (ii) 0 (iii) k^6+l^6 (iv) k^6-l^6 (v) $k^6-2l^2k^4+2l^4k^2-l^6$

11. $(-3a+\frac{3}{2}b+2c)^2$

(i) $(9a^2-6ab-12ac+\frac{9}{4}b^2+6bc+4c^2)$ (ii) $(8a^2-9ab-12ac+\frac{9}{4}b^2+6bc+4c^2)$

(iii) $(9a^2-11ab-12ac+\frac{9}{4}b^2+6bc+4c^2)$ (iv) $(9a^2-9ab-12ac+\frac{9}{4}b^2+6bc+4c^2)$

(v) $(10a^2-9ab-12ac+\frac{9}{4}b^2+6bc+4c^2)$

12. $(a-b)^2$

(i) $(-2ab+b^2)$ (ii) $(a^2-2ab+b^2)$ (iii) $(a^2-5ab+b^2)$ (iv) (a^2+ab+b^2) (v) $(2a^2-2ab+b^2)$

13. The value of $200\frac{1}{2}\times199\frac{1}{2}$ is

(i) $39999\frac{3}{4}$ (ii) $40000\frac{1}{4}$ (iii) $39999\frac{1}{2}$ (iv) $39999\frac{1}{4}$ (v) $40000\frac{1}{2}$

14. The expanded form of $(x+8)(3x-4)$ is

(i) $(20x-32)$ (ii) $(3x^2+20x-32)$ (iii) $(4x^2+20x-32)$ (iv) $(5x^2+20x-32)$ (v) $(2x^2+20x-32)$

15. If $(a+b)=10$, $ab=24$, find (a^2+b^2)

(i) 54 (ii) 52 (iii) 51 (iv) 49 (v) 53

16. $(-3a-5b)^2$

(i) $(9a^2+30ab+25b^2)$ (ii) $(10a^2+30ab+25b^2)$ (iii) $(8a^2+30ab+25b^2)$ (iv) $(9a^2+32ab+25b^2)$

(v) $(9a^2+27ab+25b^2)$

17. Find 399^3

(i) 63521189 (ii) 63521219 (iii) 63521209 (iv) 63521199 (v) 63521179

18. Find the value of $2.6^3+8.2^3-10.8^3$

(i) -690.768 (ii) -140.608 (iii) -4410.944 (iv) 4410.944 (v) 140.608

19. If $\left(x+\frac{1}{x}\right)=7$, find the value of $\left(x^3+\frac{1}{x^3}\right)$

(i) 322 (ii) 324 (iii) 321 (iv) 319 (v) 323

20. Expand $\left(x-\frac{1}{x}\right)^2$

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

21. $(-2a+2b)^3$

(i) $(-8a^3+27a^2b-24ab^2+8b^3)$ (ii) $(-7a^3+24a^2b-24ab^2+8b^3)$ (iii) $(-9a^3+24a^2b-24ab^2+8b^3)$

(iv) $(-8a^3+21a^2b-24ab^2+8b^3)$ (v) $(-8a^3+24a^2b-24ab^2+8b^3)$

22. If $(a^4+b^4)=97$, $ab=6$, find $(a+b)$

(i) 2 (ii) 5 (iii) 4 (iv) 7 (v) 6

23. Evaluate $\left(g^{\frac{1}{3}}+h^{\frac{1}{3}}\right)\left(g^{\frac{2}{3}}-g^{\frac{1}{3}}h^{\frac{1}{3}}+h^{\frac{2}{3}}\right)=$

(i) $g-h$ (ii) $g+h$ (iii) $(g+h)^2$ (iv) 0 (v) $(g-h)^2$

24. The value of $60\frac{1}{4}\times 61\frac{1}{3}$ is

(i) $3695\frac{1}{5}$ (ii) 3696 (iii) $3695\frac{1}{3}$ (iv) $3694\frac{2}{3}$

25. If $(a+b+c)=11$, $(a^2+b^2+c^2)=51$, find $(ab+ac+bc)$

(i) 35 (ii) 38 (iii) 34 (iv) 33 (v) 36

Assignment Key

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