EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Expansions

Grade : ICSE Grade IX

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1. If $\left(x-\frac{1}{x}\right)=9$, find the value of $\left(x^2+\frac{1}{x^2}\right)$

   (i) 85 (ii) 80 (iii) 84 (iv) 83 (v) 82

2. If $(a+b)=11$, $ab=30$, find (a^3+b^3)

   (i) 342 (ii) 344 (iii) 338 (iv) 341 (v) 340

3. The value of 802×798 is

   (i) 639996 (ii) 639995 (iii) 639997 (iv) 639999 (v) 639993

4. $(-2a-b+3c)(4a^2-2ab+6ac+b^2+3bc+9c^2)$

   (i) $(-8a^3-21abc-b^3+27c^3)$ (ii) $(-9a^3-18abc-b^3+27c^3)$ (iii) $(-8a^3-18abc-b^3+27c^3)$

   (iv) $(-7a^3-18abc-b^3+27c^3)$ (v) $(-8a^3-16abc-b^3+27c^3)$

5. Expand $\left(x+\frac{1}{x}\right)^2$

   (i) $x^2+2+\frac{1}{x^3}$ (ii) $x^2+5+\frac{1}{x^2}$ (iii) $x^2+2+\frac{1}{x^2}$ (iv) $x^2+0+\frac{1}{x^2}$ (v) $x^2+2+\frac{1}{x}$

6. If $(a-b)=3$, $ab=18$, find (a^2-b^2)

   (i) 30 (ii) 28 (iii) 24 (iv) 26 (v) 27

7. $(3a+3b)^2$

   (i) $(9a^2+16ab+9b^2)$ (ii) $(10a^2+18ab+9b^2)$ (iii) $(9a^2+21ab+9b^2)$ (iv) $(8a^2+18ab+9b^2)$

   (v) $(9a^2+18ab+9b^2)$

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

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

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

9. If $\left(x-\frac{1}{x}\right)=8$, find the value of $\left(x^3-\frac{1}{x^3}\right)$

(i) 533 (ii) 535 (iii) 537 (iv) 536 (v) 538

10. If $(81a^4+81b^4)=57186$, $ab=15$, find $(3a+3b)$

(i) 25 (ii) 24 (iii) 21 (iv) 23 (v) 26

11. If $(a+b)=8$, $ab=12$, find (a^2+b^2)

(i) 40 (ii) 42 (iii) 37 (iv) 41 (v) 39

12. If $\left(4x-\frac{1}{3x}\right)=2$, find the value of $\left(16x^2+\frac{1}{9x^2}\right)$

(i) $\frac{22}{3}$ (ii) $\frac{20}{3}$ (iii) 6 (iv) $\frac{32}{5}$ (v) 8

13. $(\frac{3}{2}a-3b-3c)(\frac{9}{4}a^2+\frac{9}{2}ab+\frac{9}{2}ac+9b^2-9bc+9c^2)$

(i) $(\frac{27}{8}a^3-\frac{83}{2}abc-27b^3-27c^3)$ (ii) $(\frac{27}{8}a^3-\frac{81}{2}abc-27b^3-27c^3)$ (iii) $(\frac{27}{8}a^3-\frac{79}{2}abc-27b^3-27c^3)$

(iv) $(\frac{7}{2}a^3-\frac{81}{2}abc-27b^3-27c^3)$ (v) $(\frac{33}{10}a^3-\frac{81}{2}abc-27b^3-27c^3)$

14. If $(2a+4b)=22$, $ab=15$, find $(16a^4+256b^4)$

(i) 30735 (ii) 30739 (iii) 30737 (iv) 30736 (v) 30734

15. The value of $100\frac{1}{3}\times 99\frac{2}{3}$ is

(i) $9999\frac{8}{11}$ (ii) $9999\frac{8}{9}$ (iii) $10000\frac{1}{9}$ (iv) $9999\frac{2}{3}$ (v) $10000\frac{1}{7}$

16. If $(3a-3b)\times \mathrm{A}=(9a^2-18ab+9b^2)$, then A =

(i) $(3a-6b)$ (ii) $3a$ (iii) $(2a-3b)$ (iv) $(3a-3b)$ (v) $(4a-3b)$

17. The value of 3×6 is

(i) 19 (ii) 17 (iii) 18 (iv) 16 (v) 20

18. $(a+b)^2$

(i) $(2ab+b^2)$ (ii) $(a^2+2ab+b^2)$ (iii) (a^2-ab+b^2) (iv) $(2a^2+2ab+b^2)$ (v) $(a^2+4ab+b^2)$

19. If $(a-b)=1$, $ab=6$, find (a^3-b^3)

(i) 20 (ii) 22 (iii) 19 (iv) 16 (v) 18

20. If $\left(x+\frac{1}{x}\right)=3$, find the value of $\left(x^2+\frac{1}{x^2}\right)$

(i) 7 (ii) 8 (iii) 9 (iv) 4 (v) 6

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

(i) 0 (ii) 4 (iii) 1 (iv) 2 (v) 3

22. $\left(3a-\frac{2}{3}b-\frac{2}{3}c\right)^2$

(i) $\left(8a^2-4ab-4ac+\frac{4}{9}b^2+\frac{8}{9}bc+\frac{4}{9}c^2\right)$ (ii) $\left(10a^2-4ab-4ac+\frac{4}{9}b^2+\frac{8}{9}bc+\frac{4}{9}c^2\right)$

(iii) $\left(9a^2-7ab-4ac+\frac{4}{9}b^2+\frac{8}{9}bc+\frac{4}{9}c^2\right)$ (iv) $\left(9a^2-ab-4ac+\frac{4}{9}b^2+\frac{8}{9}bc+\frac{4}{9}c^2\right)$

(v) $\left(9a^2-4ab-4ac+\frac{4}{9}b^2+\frac{8}{9}bc+\frac{4}{9}c^2\right)$

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

(i) $x^2+0+\frac{1}{x^2}$ (ii) $x^2-2-\frac{1}{x^2}$ (iii) $x^2-2+\frac{1}{x^3}$ (iv) $x^2-2+\frac{1}{x}$ (v) $x^2-2+\frac{1}{x^2}$

24. If $\left(x^2+\frac{1}{x^2}\right)=38$, find the value of $\left(x-\frac{1}{x}\right)$

(i) 7 (ii) 9 (iii) 6 (iv) 5 (v) 4

25. If $(25a^2+25b^2)=1525$, $ab=30$, find $(5a+5b)$

(i) 58 (ii) 54 (iii) 55 (iv) 56 (v) 53

Assignment Key

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

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