EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Expansions

Grade : ICSE Grade IX

1. The value of 405×403 is

   (i) 163216 (ii) 163214 (iii) 163213 (iv) 163215 (v) 163217

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

   (i) $(4a^2+12ab+9b^2)$ (ii) $(4a^2+15ab+9b^2)$ (iii) $(3a^2+12ab+9b^2)$ (iv) $(5a^2+12ab+9b^2)$

   (v) $(4a^2+9ab+9b^2)$

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

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

4. If $\left(x^4+\frac{1}{x^4}\right)=6887$, find the value of $\left(x-\frac{1}{x}\right)$

   (i) 11 (ii) 9 (iii) 7 (iv) 8 (v) 10

5. The value of $500\frac{1}{2} \times 500\frac{1}{4}$ is

   (i) $250375\frac{3}{8}$ (ii) $250375\frac{1}{10}$ (iii) $250375\frac{1}{8}$ (iv) $250375\frac{1}{6}$ (v) $250374\frac{7}{8}$

6. $(5a-2b+c)(25a^2+10ab-5ac+4b^2+2bc+c^2)$

   (i) $(125a^3+33abc-8b^3+c^3)$ (ii) $(125a^3+30abc-8b^3+c^3)$ (iii) $(125a^3+28abc-8b^3+c^3)$

   (iv) $(124a^3+30abc-8b^3+c^3)$ (v) $(126a^3+30abc-8b^3+c^3)$

7. $(4a-3b-4c)^2$

   (i) $(17a^2-24ab-32ac+9b^2+24bc+16c^2)$ (ii) $(15a^2-24ab-32ac+9b^2+24bc+16c^2)$

   (iii) $(16a^2-22ab-32ac+9b^2+24bc+16c^2)$ (iv) $(16a^2-24ab-32ac+9b^2+24bc+16c^2)$

   (v) $(16a^2-26ab-32ac+9b^2+24bc+16c^2)$

8. $(a-2b)^2$

   (i) $(2a^2-4ab+4b^2)$ (ii) $(a^2-ab+4b^2)$ (iii) $(a^2-6ab+4b^2)$ (iv) $(-4ab+4b^2)$ (v) $(a^2-4ab+4b^2)$

9. If $\left(5x+\frac{1}{2x}\right)=9$, find the value of $\left(25x^2+\frac{1}{4x^2}\right)$

(i) 77 (ii) 76 (iii) 73 (iv) 75 (v) 79

10. If $(a^2+b^2)=45$, $ab=18$, find $(a+b)$

(i) 10 (ii) 7 (iii) 8 (iv) 12 (v) 9

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

(i) 21 (ii) 15 (iii) 19 (iv) 17 (v) 18

12. If $(a+b+c)=12$, $(ab+ac+bc)=41$, find $(a^2+b^2+c^2)$

(i) 61 (ii) 64 (iii) 63 (iv) 62 (v) 60

13. $(3a+3b)(9a^2-9ab+9b^2)$

(i) $(27a^3+24b^3)$ (ii) $(27a^3+27b^3)$ (iii) $(28a^3+27b^3)$ (iv) $(27a^3+29b^3)$ (v) $(26a^3+27b^3)$

14. If $(-a+5b)\times A=(a^2-25b^2)$, then A =

(i) $(-5b)$ (ii) $(-a-3b)$ (iii) $(-2a-5b)$ (iv) $(-a-8b)$ (v) $(-a-5b)$

15. The value of $80\frac{1}{2}\times 79\frac{1}{2}$ is

(i) $6399\frac{1}{2}$ (ii) $6399\frac{1}{4}$ (iii) $6400\frac{1}{4}$ (iv) $6399\frac{3}{4}$ (v) $6400\frac{1}{2}$

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

(i) 6239 (ii) 6241 (iii) 6240 (iv) 6236 (v) 6238

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

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

(v) $(a^3-5abc+b^3+c^3)$

18. If $(a+b)=7$, $ab=12$, find (a^3+b^3)

(i) 89 (ii) 93 (iii) 90 (iv) 91 (v) 92

19. $(5a+2b)(5a-2b)$

(i) $(25a^2-b^2)$ (ii) $(26a^2-4b^2)$ (iii) $(24a^2-4b^2)$ (iv) $(25a^2-4b^2)$ (v) $(25a^2-7b^2)$

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

(i) $(\frac{9}{4}a^2-\frac{9}{2}ab+9ac+\frac{9}{4}b^2-9bc+9c^2)$ (ii) $(\frac{13}{6}a^2-\frac{9}{2}ab+9ac+\frac{9}{4}b^2-9bc+9c^2)$

(iii) $(\frac{9}{4}a^2-\frac{7}{2}ab+9ac+\frac{9}{4}b^2-9bc+9c^2)$ (iv) $(\frac{5}{2}a^2-\frac{9}{2}ab+9ac+\frac{9}{4}b^2-9bc+9c^2)$

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

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21. If $\left(x^2+\frac{1}{x^2}\right)=7$, find the value of $\left(x+\frac{1}{x}\right)$

(i) 3 (ii) 5 (iii) 4 (iv) 2 (v) 0

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

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

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23. If $\left(3x-\frac{1}{3x}\right)=2$, find the value of $\left(27x^3-\frac{1}{27x^3}\right)$

(i) 15 (ii) 11 (iii) 13 (iv) 17 (v) 14

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24. $(a+b+c)^2$

(i) $(a^2+2ab+2ac+b^2+2bc+c^2)$ (ii) $(a^2+2ac+b^2+2bc+c^2)$ (iii) $(2a^2+2ab+2ac+b^2+2bc+c^2)$

(iv) $(2ab+2ac+b^2+2bc+c^2)$ (v) $(a^2+5ab+2ac+b^2+2bc+c^2)$

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25. $(-\frac{3}{2}a-\frac{2}{3}b)(\frac{9}{4}a^2-ab+\frac{4}{9}b^2)$

(i) $(-\frac{33}{10}a^3-\frac{8}{27}b^3)$ (ii) $(-\frac{27}{8}a^3-\frac{2}{9}b^3)$ (iii) $(-\frac{27}{8}a^3-\frac{10}{27}b^3)$ (iv) $(-\frac{27}{8}a^3-\frac{8}{27}b^3)$ (v) $(-\frac{7}{2}a^3-\frac{8}{27}b^3)$

Assignment Key

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