EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Expansions

Grade : ICSE Grade IX



1. If $(a+b)=6$ , $ab=8$ , find $(a^2+b^2)$

   (i) 19 (ii) 22 (iii) 21 (iv) 18 (v) 20

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

   (i) 3 (ii) 4 (iii) 6 (iv) 2 (v) 1

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

   (i) $(4a^2+\frac{8}{3}ab+\frac{4}{9}b^2)$ (ii) $(4a^2+\frac{10}{3}ab+\frac{4}{9}b^2)$ (iii) $(4a^2+2ab+\frac{4}{9}b^2)$ (iv) $(3a^2+\frac{8}{3}ab+\frac{4}{9}b^2)$

   (v) $(5a^2+\frac{8}{3}ab+\frac{4}{9}b^2)$

4. If $\left(x^2+\frac{1}{x^2}\right)=66$ , find the value of $\left(x-\frac{1}{x}\right)$

   (i) 10 (ii) 8 (iii) 9 (iv) 6 (v) 7

5. If $(a^4+b^4)=1377$ , $ab=18$ , find $(a+b)$

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

6. $(4a+2b)(4a-2b)$

   (i) $(16a^2-4b^2)$ (ii) $(16a^2-6b^2)$ (iii) $(15a^2-4b^2)$ (iv) $(16a^2-b^2)$ (v) $(17a^2-4b^2)$

7. The value of $802\times802$ is

   (i) 643203 (ii) 643207 (iii) 643204 (iv) 643205 (v) 643201

8. If $(16a^4+16b^4)=20992$ , $ab=12$ , find $(2a+2b)$

   (i) 13 (ii) 16 (iii) 15 (iv) 19 (v) 17

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

   (i) 79 (ii) 77 (iii) 78 (iv) 81 (v) 80

10. The value of $22 \times 16$ is

(i) 351 (ii) 352 (iii) 354 (iv) 353 (v) 349

11. If $(a-b)=1$ , $ab=20$ , find $(a^4-b^4)$

(i) 370 (ii) 366 (iii) 371 (iv) 369 (v) 368

12. If $\left(x^4+\frac{1}{x^4}\right)=3842$ , find the value of $\left(x+\frac{1}{x}\right)$

(i) 9 (ii) 8 (iii) 6 (iv) 10 (v) 7

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

(i) $(a^3-3abc+b^3+c^3)$ (ii) $(a^3-abc+b^3+c^3)$ (iii) $(a^3-5abc+b^3+c^3)$ (iv) $(2a^3-3abc+b^3+c^3)$

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

14. If $\left(x-\frac{1}{x}\right)=6$ , find the value of $\left(x^4+\frac{1}{x^4}\right)$

(i) 1443 (ii) 1441 (iii) 1439 (iv) 1442 (v) 1444

15. If $\left(x+\frac{1}{x}\right)=5$ , find the value of $\left(x^3+\frac{1}{x^3}\right)$

(i) 107 (ii) 112 (iii) 109 (iv) 110 (v) 111

16. $(a+b)^2$

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

17. If $(4a+6b)=28$ , $ab=8$ , find $(64a^3+216b^3)$

(i) 5823 (ii) 5822 (iii) 5824 (iv) 5827 (v) 5825

18. $(a-b)^2$

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

19. $(3a-\frac{3}{2}b)^2$

(i) $(8a^2-9ab+\frac{9}{4}b^2)$ (ii) $(9a^2-9ab+\frac{9}{4}b^2)$ (iii) $(10a^2-9ab+\frac{9}{4}b^2)$ (iv) $(9a^2-6ab+\frac{9}{4}b^2)$

(v) $(9a^2-12ab+\frac{9}{4}b^2)$

20. If $(a^2+b^2)=41$ , $ab=20$ , find $(a+b)$

(i) 8 (ii) 9 (iii) 10 (iv) 12 (v) 6

21. If $(a+b)=10$ , $ab=24$ , find $(a^4+b^4)$

(i) 1554 (ii) 1551 (iii) 1553 (iv) 1552 (v) 1549

22. $(2a-2b)(4a^2+4ab+4b^2)$

(i) $(7a^3-8b^3)$ (ii) $(8a^3-8b^3)$ (iii) $(9a^3-8b^3)$ (iv) $(8a^3-11b^3)$ (v) $(8a^3-5b^3)$

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

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

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

(i) $3x^5+7x^3+3x^4+7x^2+4x+4$ (ii) $x^5+x^4+x^3+x^2$ (iii) $x^4-1$ (iv) $-2x^3-2x$

25. The value of $30\frac{1}{3}\times 29\frac{2}{3}$ is

(i) $900\frac{1}{9}$ (ii) $899\frac{2}{3}$ (iii) $899\frac{8}{11}$ (iv) $899\frac{8}{9}$ (v) $900\frac{1}{7}$

## Assignment Key

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