

ADDING AND SUBTRACTING RADICAL EXPRESSIONS

Perform the indicated operations and simplify as completely as possible.

1. a) $3a + a + 5a$

b) $3\sqrt{7} + \sqrt{7} + 5\sqrt{7}$

2. a) $7a - a$

b) $7\sqrt{11} - \sqrt{11}$

3. a) $6a + b$

b) $6\sqrt{2} + \sqrt{5}$

4. a) $a + a$

b) $\sqrt{13} + \sqrt{13}$

5. $\sqrt{11} + 8\sqrt{2} - \sqrt{2} - 3\sqrt{11}$

6. $5\sqrt{5} + 2\sqrt{5} - 4\sqrt{3}$

7. a) $4(a - b) + 5(b - a)$

b) $4(\sqrt{11} - \sqrt{7}) + 5\sqrt{7} - \sqrt{11}$

8. $3(\sqrt{5} + 4\sqrt{10}) - 5(\sqrt{5} - 3\sqrt{10})$

9. $2(\sqrt{x} - \sqrt{y}) - (\sqrt{x} - 2\sqrt{y})$

10. $\sqrt{12} + \sqrt{27}$

11. $\sqrt{49} + \sqrt{50}$

12. $\sqrt{28} - \sqrt{7}$

13. $6\sqrt{8} - \sqrt{98}$

14. $8\sqrt{25} - 3\sqrt{21}$

15. $\sqrt{16m} - \sqrt{64m}$

16. $\sqrt{18z} + \sqrt{8z}$

17. $\sqrt{54x} - \sqrt{24x}$

18. $\sqrt{2} - 4\sqrt{18}$

19. $4\sqrt{45} + 3\sqrt{20}$

20. $\sqrt{20x^8} - \sqrt{80x^8}$

21. $5\sqrt{16x^4} + 3\sqrt{25x^4}$

22. $\sqrt{27x^4} - \sqrt{48x^4}$

23. $\sqrt{6} + 3\sqrt{54}$

24. $\sqrt{36x} - \sqrt{100x}$

25. $3\sqrt{49} + 5\sqrt{28}$

ADDING AND SUBTRACTING RADICAL EXPRESSIONS

Homework

Perform the indicated operations and simplify as completely as possible.

1. a) $x + 2x + 3x$

b) $\sqrt{5} + 2\sqrt{5} + 3\sqrt{5}$

2. a) $4x - x$

b) $4\sqrt{6} - \sqrt{6}$

3. a) $3x + 5y$

b) $3\sqrt{5} + 5\sqrt{3}$

4. a) $x + x$

b) $\sqrt{5} + \sqrt{5}$

5. $\sqrt{5} + 3\sqrt{7} - 4\sqrt{5} - 5\sqrt{7}$

6. $3\sqrt{3} + 4\sqrt{3} - \sqrt{2}$

7. a) $2(x - y) + 3(y - x)$

b) $2(\sqrt{5} - \sqrt{3}) + 3(\sqrt{3} - \sqrt{5})$

8. $5(3\sqrt{6} + 2\sqrt{7}) - 4(\sqrt{7} - 2\sqrt{6})$

9. $6(\sqrt{m} - \sqrt{n}) - (3\sqrt{m} + 6\sqrt{n})$

10. $\sqrt{8} + \sqrt{18}$

11. $\sqrt{25} + \sqrt{24}$

12. $\sqrt{20} - 5$

13. $4\sqrt{12} - \sqrt{75}$

14. $\sqrt{20} + \sqrt{40} + \sqrt{60}$

15. $3\sqrt{72} - 5\sqrt{32}$

16. $5\sqrt{36} + 4\sqrt{30}$

17. $\sqrt{25x} + \sqrt{36x}$

18. $\sqrt{12w} + \sqrt{27w}$

19. $\sqrt{45x^3} - \sqrt{20x^3}$

20. $\sqrt{20x^8} - \sqrt{80x^8}$

21. $5\sqrt{16x^4} + 3\sqrt{25x^4}$

Homework: This worksheet
Answers to odd problems:

1. a) $6x$ b) $6\sqrt{5}$

3. a) $3x + 5y$ b) $3\sqrt{5} + 5\sqrt{3}$

5. $-3\sqrt{5} - 2\sqrt{7}$

7. a) $-x + y$ b) $-\sqrt{5} + \sqrt{3}$

9. $3\sqrt{m} - 12\sqrt{n}$

11. $5 + 2\sqrt{6}$

13. $3\sqrt{3}$

15. $-2\sqrt{2}$

17. $11\sqrt{x}$

19. $x\sqrt{5x}$

21. $35x^2$